# Manufacturers Record

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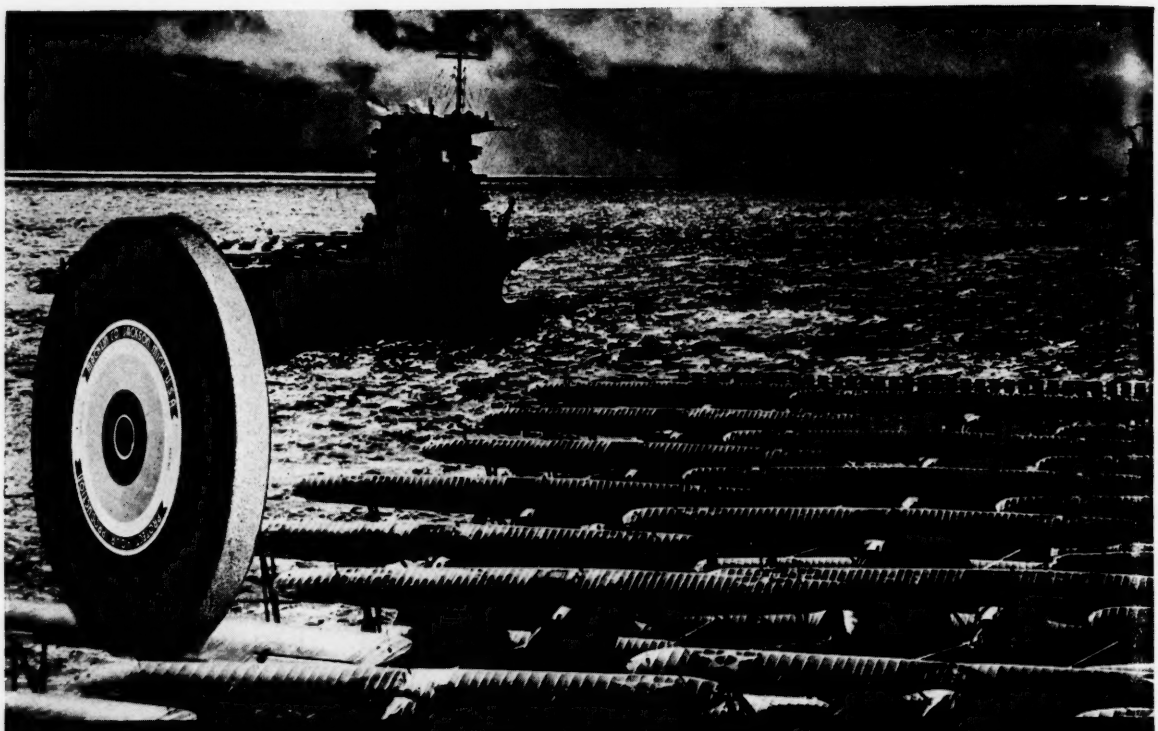
## It Is Happening Here

Legalized banditry by labor leaders, a discriminatory wage and hour law, payroll taxes disguised as "social security contributions", nine billions of dollars in gifts to farmers in eight years, and now the threat of government control of prices, are destroying the American way of life.

Financial profligacy to buy the favor of the masses, and increasing control of individual enterprise are clear sign posts pointing to State Socialism.

SCIENCE AND INDUSTRY

JULY 1941



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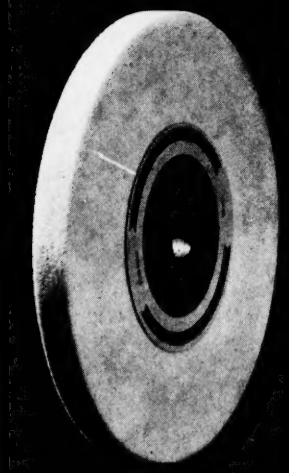

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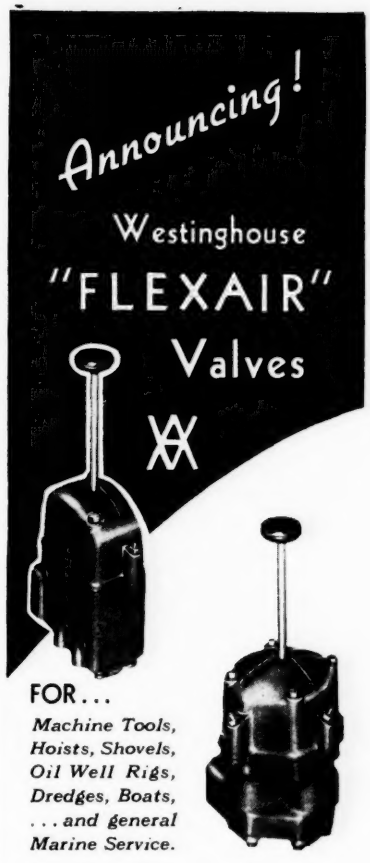


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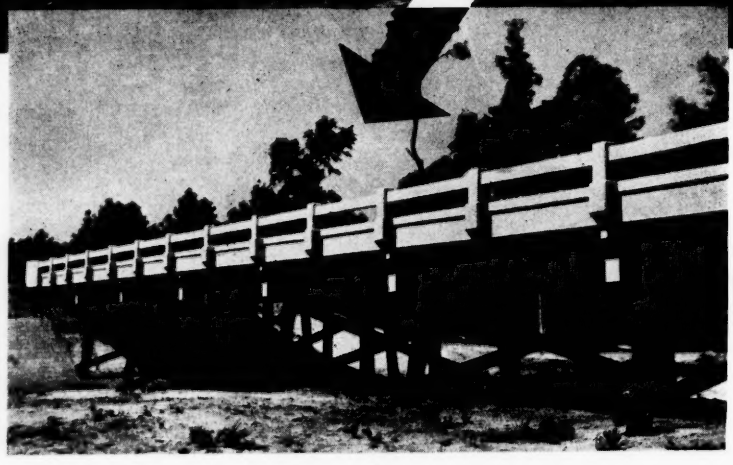

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# TO ACHIEVE UNITY

Before there was even any thought about defense we had arrived at a point in this country where collectivist legislation and extravagant spending had caused the gravest concern in the minds of all thinking people. Now, with increased centralization of authority and the tremendous expenditures necessary for defense, the danger to our American way of life is greatly intensified.

The economic nightmare of eight years with all its confusion and silly theorizing has brought the country to a pass where strong measures are necessary to undo even a part of the mischief. Instead of legislators who hear nothing but the crack of a whip, it is time for strong men, of whom there are many in both Houses of Congress, to place the facts fully before the country so that an aroused electorate may see the danger that lies immediately ahead, and correct it at its source.

The need for national unity is paramount, but it cannot be achieved by mere proclamation. The country remembers too well the dishonest and subversive methods of an administration that has used every crisis and emergency to establish a politico-economic doctrine that could not be sold on its merits.

The country is ready to unite on a program of national defense even if it means war, but not if it is to be a "pork barrel" program in which defense needs are sacrificed for the political gain of minority pressure groups.

To achieve national unity the President must:

1. Announce a specific, definite program
2. Delegate authority to others with their responsibilities clearly defined and established
3. Stop labor disorders
4. Stop unnecessary government spending.

The confusion in Washington today is appalling, and the politics played is nauseating. To correct it, a clear cut program is needed and a firm hand to administer it, with favor or malice toward none.

# Manufacturing Machine Guns

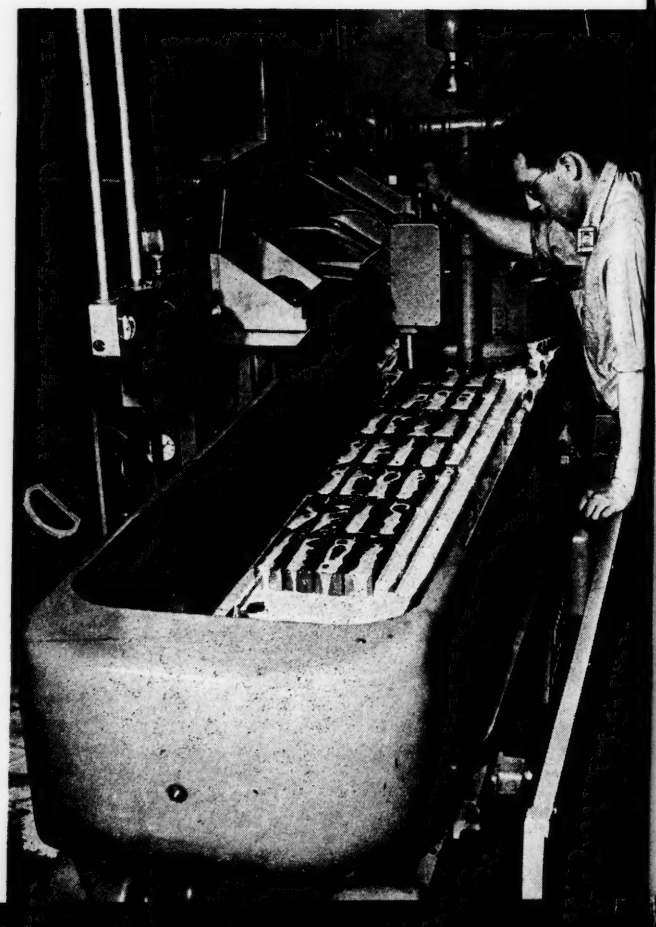
THE AC Spark Plug Division in Flint, Michigan, is one of four General Motors plants engaged in producing the first machine guns ever made for the U. S. Army outside of the small arms industry in the East. Production is actually under way at Flint and also at the plant of the Saginaw Steering Gear Division in Saginaw, Michigan. Two other plants are in process of tooling up.

Plants participating in the G. M. machine gun assignment, which totals $61,399,171 for guns and $26,583,306 for facilities, are: AC Spark Plug Division, Flint—.50 caliber; Brown-Lipe-Chapin Division, Syracuse—.30 caliber; Frigidaire Division, Dayton—.50 caliber; and Saginaw Steering Gear Division, Saginaw—.30 caliber.

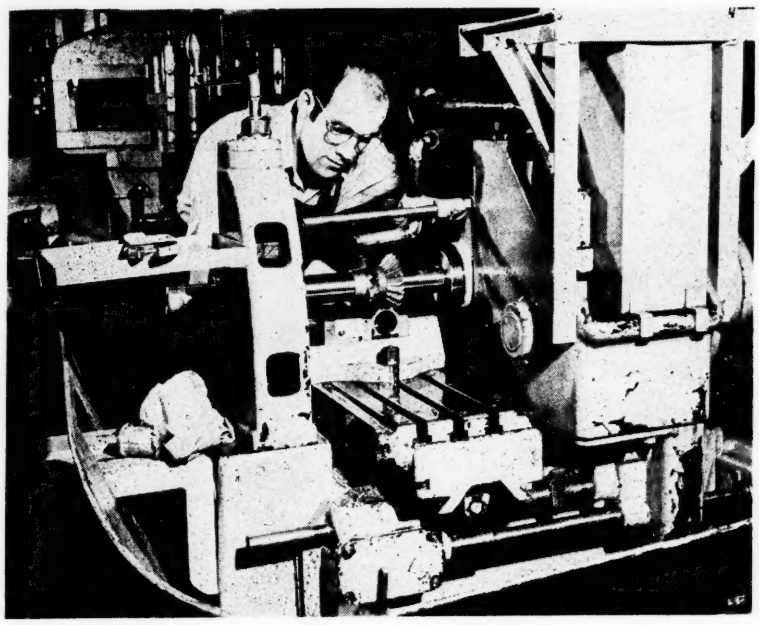
The manufacture of machine guns by General Motors provides one of the best examples in the entire defense program of the application of the automobile industry's resources of technical skill and management experience to the production of a non-automotive product.

It also illustrates how, under the spur of greatly increased demand, a craft operation is being stepped up to a mass production basis that makes use of the assembly line and of the latest in machine technique. Typical of what the latter means in increasing production speed is the adoption of a new technique for rifling a machine gun barrel.

*Development under way produces 20 to 40 barrels per hour by machine instead of one by hand*



***Above—Operation of the machine guns being produced by AC Spark Plug division was demonstrated to a party of army and defense production officials recently at the Flint plant. Left to right are: Lieut. W. F. Kaiser, liaison officer; Major J. J. Breen, contracting officer; W. C. Williams, General Motors vice president; Major General C. M. Wesson, chief of army ordnance; J. D. Biggers, production director for OPM, and G. Mann, Jr., general manager of AC. Right — Surface grinding part blanks to accurate dimensions.***



*Left—Milling sides of oil buffer body of machine gun. Below—Tumbling operation to remove sharp corners of machine gun parts.*

chine gun contract was signed in September, 1939, and hasn't been completed yet. The job was essentially the old problem of the fox, the goose and the corn. It involved making space available for production of machine gun parts as fast as equipment was received, moving regular automotive production departments to a new plant as fast as it became usable and doing both jobs without interfering with operating efficiency.

How successful the conversion was is indicated by the fact that the first complete gun was assembled in late March months ahead of the schedule originally called for by the War Department contract. Not only that, but a large reserve of barrels has been turned out (each machine gun is shipped with five

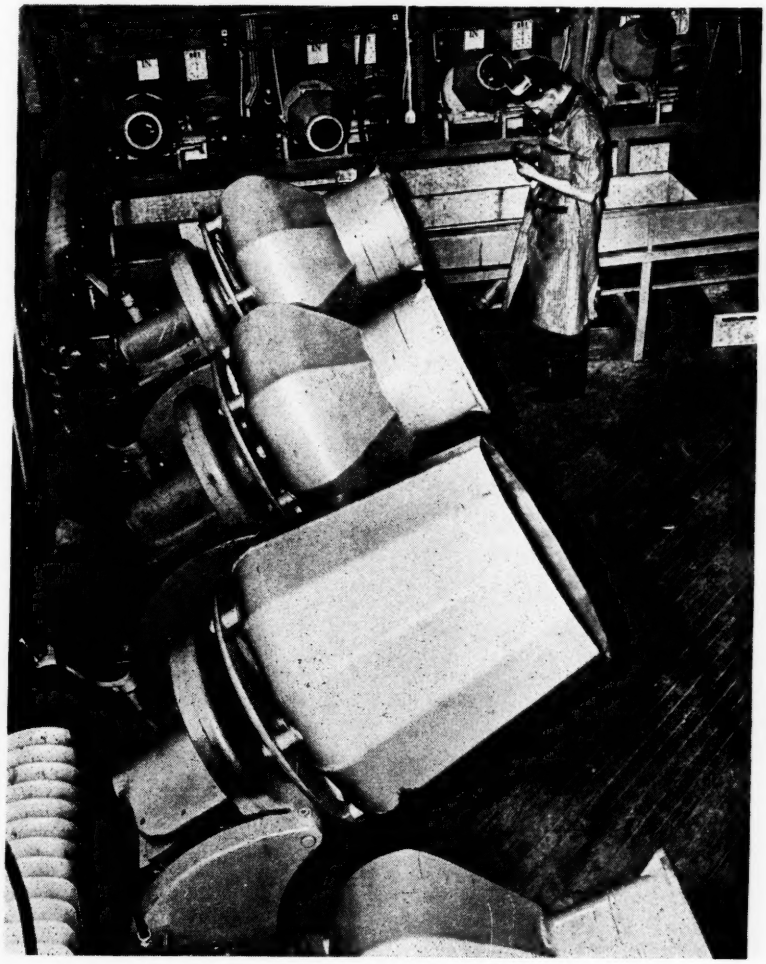
Under the old method of rifling, a hook cutter was pulled into the barrel 160 successive times. At each "pass' the cutter took out a chip two-tenths of an inch deep. It took an hour to rifle a barrel.

Army ordnance experts thought they knew of a better way, but production had always been too limited to justify a change. Now, however, a machine has been built and is in the process of production development (initiated at Rock Island Arsenal), which broaches the rifling in a continuous cutting operation. Two passes are made instead of 160, and 20 to 40 barrels are produced an hour instead of one. This method is still in an experimental state and comparative cost belie apparent gain.

This is but one of hundreds of changes and short-cuts that are being introduced to speed up production. All of the manufacturers of machine guns, government and private, are members of a small arms committee, and one of the most important functions of the committee, which meets monthly at different plants, is to serve as a clearing house for new ideas.

At the AC plant in Flint many of these innovations are already in use. Others are being introduced daily. Some are as simple as using an electric light at foot level for inspection of the inside of a machine gun barrel instead of holding the heavy cylinder up to a window.

The AC operation is an interesting example of the conversion of an old plant to new uses—a piecemeal conversion that began shortly after the ma-

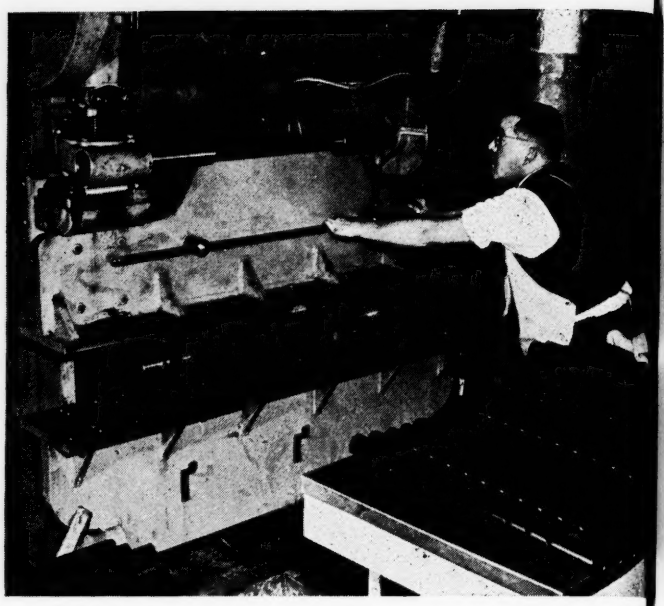


spares) and a substantial backlog of various key parts accumulated.

This outstanding record—all the more remarkable because six months before the first gun was produced only one or two men in the plant even knew the difference between a Browning and a Lewis—is ascribed by AC executives primarily to three factors. The first was the celerity with which the Army arsenals made available hundreds of machines which had been in storage since the World War. The machines were grease-encrusted, they were old, they were mostly belt-driven. But they were far better than nothing. Engineers had them reconditioned, motorized and tooled, and some of them were put to work in the plant and some in the Flint technical schools, where they were used for training young men for the new job.

The second factor was this very matter of training, of teaching the few skilled men available a series of entirely new operations so they could intelligently supervise the work, of teaching the best of the unskilled to be "set-up" men, and of training the remainder as operators.

And the final factor was the engineering factor, the ability to find new ways of doing things to utilize to the full the improvements in technique developed by industry since the World War, to substitute stamping in a punch press for the much longer operation of milling, to devise a chambering machine that does a better job mechanically than even the most skilled gunsmith can do.



*At one stroke of the press ten holes are pierced in the barrel jacket.*

The AC machine gun plant is organized by departments with each department dealing with a major part. There is the barrel department, the side plate department, the bolt department, the trunnion department and so on. The general picture is that of a flow of materials down each department production line, the gradual transformation of rough billets and forgings into finely machined parts, the converging of parts into sub-assemblies and finally the moving of sub-assemblies by conveyor belt to the final assembly line. For every pound of machine gun that reaches final assembly three pounds of metal enter the plant. Of course, the flow is broken here and there by the necessity for heat-treating, and in certain departments the production line has to be abandoned in favor of having each machine perform a variety of operations, but these are exceptions to the overall picture.

*Drilling trunnion blocks on a battery of drilling machines.*

The .50 caliber gun of the type being manufactured at AC is a highly efficient but complex mechanism. It has a firing rate of to 650 rounds a minute and a range of four miles. The aircraft gun, weighing 62 pounds, contains 311 parts, while the heavy-barrel gun weighs approximately 90 pounds and contains 399 parts. To make these parts requires 3,000 separate operations for the light gun and 3,500 for the heavy. One part alone, the bolt, takes 123 operations.

Under the AC method of manufacturing guns a machine operator is just that and no more. He or she (about 40 per cent of the operators are girls) are taught a few simple movements—placing the part in the fixture, manipulating the necessary levers, taking the part out, gauging it—and that is all. Setting up the machine, adjusting it, fixing it

*The shavings resulting from a two ten-thousandths of an inch cut in the rifling of the machine gun barrel.*

if something goes wrong—these are jobs for the "set-up" man.

To make the system even more foolproof, a card affixed to each machine lists the gauges for the machine and has printed on it a diagram indicating just where to apply them on the part. Beneath the card is a gauge rack with a space for each gauge outlined on it in red. A master part showing the completed operation is also kept on the rack. On the back of the card is listed the steps that must be taken by the "set-up" man in order to prepare the machine for operation.

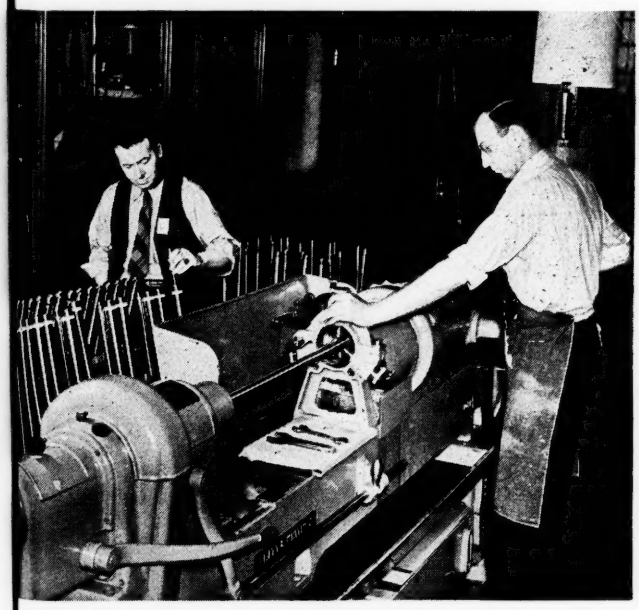
AC began its machine gun training program with a nucleus of eight experienced foremen from its regular staff. After learning how to make guns themselves, they trained other experienced men hired from the outside, and in this way a staff of about 80 foremen and assistant foremen was assembled. Next step was to obtain from the Flint schools, which had set up two shifts of night courses for the purpose, partially trained boys and young men who could be developed as "set-up" men or taught how to operate machines like profilers that require a considerable amount of manual skill. Those that failed to make the grade were utilized as regular machine operators to handle types of work unsuited for women.

At the present time the AC machine gun plant at Flint has some 2,000 employees, of which about three-fourths have been hired through the local schools. By next September it is expected that the payroll will be up 30 percent. The plant is operating two and three shifts, six and seven days a week. On bottleneck operations, the plant is running 21 hours a day.

All four General Motors machine gun plants expect to be in production by Fall, at which time they will be employing in excess of 10,000 workers. This does not include workers in 51 non-General Motors plants which furnish the four gun manufacturers with a variety of small parts as well as with raw materials.

Production will reach its peak as soon as all machines and tools have been received and as soon as operators have learned to work with speed as well as accuracy and care. However, production never will be frozen as to form—not if the engineers can help it. As one of them at AC said:

"After all, we have been changing things in our spark plug plant almost every day for the last 30 years. When we get to the point where we can't continue to improve our methods or product, we'll stop and let someone else have a try."



*After being chambered the machine gun barrels are then gauged for accuracy.*



XUM

# South's Contracts at Peak Point

## *Records Topple as Six-Month Total Passes Billion Mark, June Awards Hit New High*

by

**S. A. Lauver**
*News Editor*

SOUTHERN construction for the first six months of this year has skyrocketed beyond any other period on record, the total of contracts awarded being $1,152,381,000. This figure, a peak never before reached in a comparable time, is nearly triple the aggregate for the similar period of 1940, a fact which foreshadows the greatest construction year in history.

Last year at this time the total of Southern contracts, as reported in the CONSTRUCTION daily bulletin, was $413,721,000, or less than thirty-six per cent of the current six-month level. The total for the entire twelve months of 1940, which was rated an all-time banner year, was $1,534,350,000, with the current six-month figure only twenty-five per cent behind that record.

The $374,914,000 total of contracts in June was also a record breaker. No other month has ever touched near this high figure. The closest was the $226,168,000 of June 1930, when the South's greatest pipeline construction was under way. There is a possibility that coming months will see a similar situation, as efforts are made to remedy the lack of oil transportation facilities.

Federal funds during June continued to pour into Southern industrial arteries. Great plants for munitions manufacture were either placed under contract or proposed by the military authorities, as additional energies were applied to the solution of the industrial phase of the current "arsenal of defense" production program. Many of the projects are to be located at inland points to lessen air attack hazard, or at already established operations or industrial centers.

Greatly expanded public building, highway and engineering activity contributed much to the high June figure. The total of public building for June was $88,532,000, as compared with the $30,579,000 of the preceding month. June engineering contracts were $33,572,000, more than four times the total of May. Road and bridge work rose to $23,090,000; the total for May being $16,775,000.

More than fifty-seven per cent of the June contract total, or $215,049,000 represents industrial contracts, a big slice of which is being financed with public funds. The pressing need for metals in plane manufacture resulted in increased prospects for Southern developments. Plants for such production and for munitions making were proposed at widely separated points.

Reports indicating the possibility of a South Carolina aluminum plant were followed by an O.P.M. announcement that North Carolina, Arkansas and Alabama were the Southern States to share in a 600 million pound capacity increase in the country's aluminum facilities. Carolina Aluminum Co., affiliate of Aluminum Company of America, at the same time let the contract for $125,000 improvements to its filter plant. Other Aluminum Company projects under way in North Carolina under the company's $150,000,000 expansion program, are the Nantahala and Glenville hydroelectric projects.

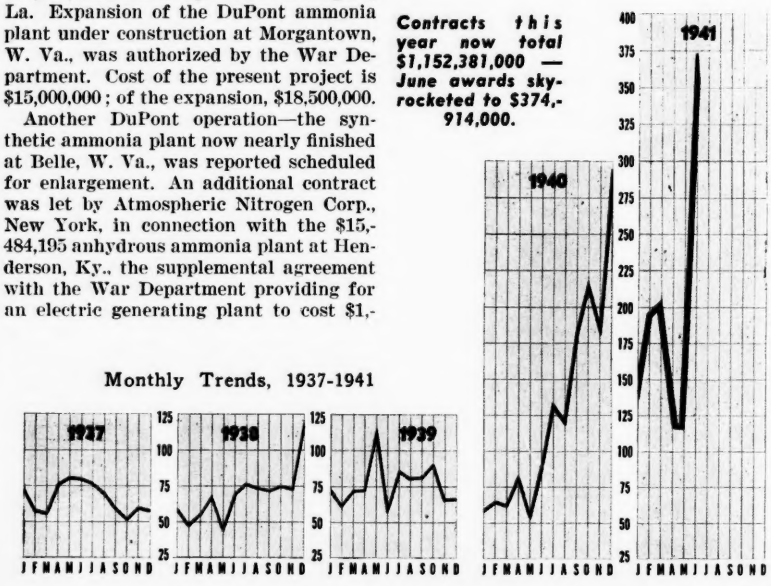
A large magnesium plant may be established near the Grand River hydroelectric plant now starting operations in northeast Oklahoma. Mathieson Alakli Works plans a $6,500,000 metallic magnesium plant at Lake Charles, La. Dow Chemical Co., Midland, Mich., concern which has pioneered in extraction of minerals from the sea, proposed to double the size of its big magnesium plant on the Gulf of Mexico, at Freeport, Texas.

Ammonia was also a product for which large new Southern facilities were proposed. Commercial Solvents Co., New York, is soon to let the contract for a $16,750,000 ammonia plant at Sterlington, La. Expansion of the DuPont ammonia plant under construction at Morgantown, W. Va., was authorized by the War Department. Cost of the present project is $15,000,000; of the expansion, $18,500,000.

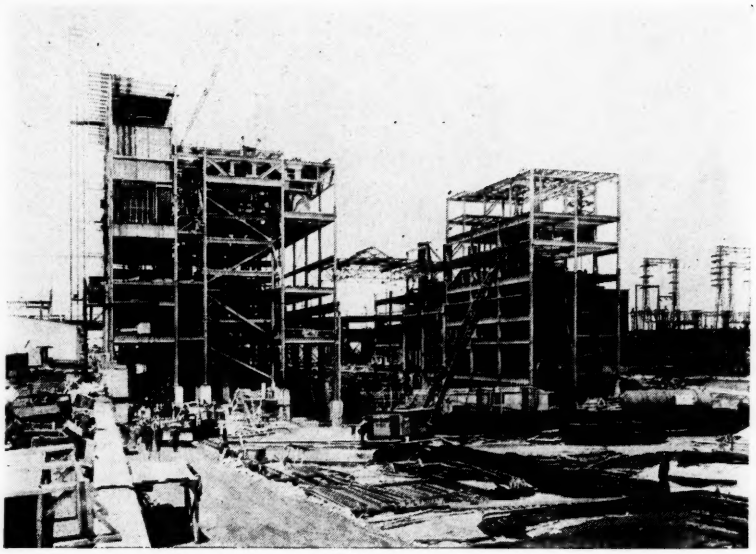
Another DuPont operation—the synthetic ammonia plant now nearly finished at Belle, W. Va., was reported scheduled for enlargement. An additional contract was let by Atmospheric Nitrogen Corp., New York, in connection with the $15,484,195 anhydrous ammonia plant at Henderson, Ky., the supplemental agreement with the War Department providing for an electric generating plant to cost $1,100,000. Corpus Christi, Texas, is to be the site of a big $5,200,000 zinc refinery, which is understood to be proposed by American Smelting & Refining Co., of New York.

A site between East Chattanooga and Ooltewah, in Tennessee, was selected by the War Department for a $39,000,000 trinitrotoluene plant to be constructed and operated by Hercules Powder Co. Output of the T. N. T. plant being built at Weldon Springs, Mo., will be doubled upon completion of a newly announced $20,000,000 expansion. Army officials authorized a $24,675,000 addition to the Alabama Ordnance Works, at Childersburg, 40 miles southeast of Birmingham, in Talladega County. The new facilities will be for additional production of T. N. T., D. N. T. and tetryl. Sites were being sought in Missouri for a $100,000,000 T. N. T. plant.

Reports from Charleston, W. Va., state the Carbide & Carbon Chemicals Corp. has an option on 170 acres of land near




Monthly Trends, 1937-1941



***Union Electric Company of Missouri, St. Louis, has construction well along on its Venice No. 2 power plant, as is seen in the photograph at left. Being built by Stone & Webster Engineering Corp., of Boston, the new plant will serve increasing demands caused by national defense production. A new General Electric 8,000-kilowatt steam turbogenerator, single casing 1,800-r.p.m. machine is being installed.***

the local airport for erection of a plant to produce basic materials for plastics. A factory to make calcium carbide is to be built at Louisville, Ky., under a contract let by National Carbide Corp. Cost is estimated at $1,000,000. Enlargement was reported for the Hercules plant of Radford Ordnance Works, in Pulaski County, Virginia.

U. S. Engineers at Little Rock, Ark., worked on appraisal of a 2½ by 4-mile site near Marche, Ark., where the $8,000,000 Maumelle picric acid plant is proposed. The Federal Government is also planning expenditure of $10,000,000 for a gun turret plant on a tract adjoining the St. Louis, Mo., plant of Emerson Electric Co., which is spending $1,000,000 for tools and equipment under a War Department agreement. Site and buildings of the bomber landing gear plant to be built at Houston, Texas, by Hughes Tool Co., will cost $3,725,000. Estimated total cost is $12,000,000.

A site near Hope, Ark., was selected as the location for a $15,000,000 layout to test ordnance equipment. Contract was awarded to build a $45,500,000 plant at Texarkana, Texas for loading artillery shells and bombs. Work will start about August 15 on a $33,000,000 fuse and detonator plant at Jacksonville, Ark. Contract was let by the War Department for a $30,000,000 shell loading plant near Minden, La.

Capacity of a small arms plant being built at St. Louis, Mo., is to be tripled by additional facilities costing $58,850,000. Erection of a small arms manufacturing plant in North Carolina was proposed. Its cost would be $30,000,000. The $34,000,000 shell loading plant at Milan, Tenn., is to be enlarged by expenditure of $5,395,000. Expansion of the $23,000,000 shell forging plant under construction at Gadsden, Ala., is proposed by Army officials to bring the total cost there to $70,000,000 A $25,000,000 shell loading plant may be built near Shreveport, La.

Big power projects were also in the news, as congressional authorization was given to a $30,000,000 start on the $51,000,000 program of Tennessee Valley Authority for providing an additional 117,000 kilowatts of power for aluminum manufacture. Alabama Power Co. announced plans for installing a 60,000-kilowatt unit at its Gorgas steam plant, cost of which is estimated at $11,000,000. Contract has been awarded for the generator under this program.

Ebasco Services, Inc., New York, received bids for constructing the $3,000,000 steam power plant for Arkansas Power & Light Co., which proposes to utilize the sour gas of southwest Arkansas in its operation. Savannah Electric & Power Co., Savannah, Ga., entered into an agreement with Georgia Power Co. to build 70 miles of 110,000-volt transmission line to connect the two systems. The District Engineer at Nashville, Tenn., was instructed to start work on $55,000,000 Wolf Creek Dam on the Cumberland River, near Jamestown, Ky. Upon completion, the project is understood to be

(*Continued on page* 60)

## South's Construction by States

| | June, 1941 | | Contracts Awarded First Six Months 1941 | Contracts Awarded First Six Months 1940 |
|---|---|---|---|---|
| | Contracts Awarded | Contracts to be Awarded | | |
| Alabama | $17,050,000 | $110,671,000 | $135,689,000 | $19,603,000 |
| Arkansas | 11,549,000 | 76,590,000 | 26,569,000 | 7,946,000 |
| District of Columbia | 6,306,000 | 45,740,000 | 33,347,000 | 22,755,000 |
| Florida | 9,006,000 | 13,773,000 | 49,742,000 | 44,946,000 |
| Georgia | 12,585,000 | 11,331,000 | 56,795,000 | 25,636,000 |
| Kentucky | 10,129,000 | 66,058,000 | 48,979,000 | 13,806,000 |
| Louisiana | 52,628,000 | 96,586,000 | 99,029,000 | 23,929,000 |
| Maryland | 10,164,000 | 8,301,000 | 65,479,000 | 35,310,000 |
| Mississippi | 13,529,000 | 6,026,000 | 29,288,000 | 11,438,000 |
| Missouri | 8,418,000 | 209,285,000 | 49,898,000 | 27,599,000 |
| North Carolina | 13,942,000 | 70,323,000 | 65,242,000 | 11,596,000 |
| Oklahoma | 4,403,000 | 15,495,000 | 22,927,000 | 8,630,000 |
| South Carolina | 8,638,000 | 3,975,000 | 36,030,000 | 8,733,000 |
| Tennessee | 58,834,000 | 7,809,000 | 121,020,000 | 25,107,000 |
| Texas | 73,028,000 | 104,257,000 | 194,680,000 | 94,007,000 |
| Virginia | 33,515,000 | 6,612,000 | 62,155,000 | 19,427,000 |
| West Virginia | 20,190,000 | 3,489,000 | 55,512,000 | 13,253,000 |
| TOTAL | $373,914,000 | $856,321,000 | $1,152,381,000 | $413,721,000 |

## Statistics of South's Construction

| | June, 1941 | | Contracts Awarded First Six Months 1941 | Contracts Awarded First Six Months 1940 |
|---|---|---|---|---|
| | Contracts Awarded | Contracts to be Awarded | | |
| PRIVATE CONSTRUCTION BUILDING | | | | |
| Assembly (Churches, Theatres, Auditoriums, Fraternal) | $1,445,000 | $2,863,000 | $10,184,000 | $9,997,000 |
| Commercial (Stores, Restaurants, Filling Stations, Garages) | 3,202,000 | 1,234,000 | 14,922,000 | 16,102,000 |
| Residential (Apartments, Hotels, Dwellings) | 8,565,000 | 2,673,000 | 49,323,000 | 54,311,000 |
| Office | 459,000 | 245,000 | 6,261,000 | 3,311,000 |
| | $13,671,000 | $7,015,000 | $80,690,000 | $83,721,000 |
| INDUSTRIAL | $215,049,000 | $505,024,000 | $609,258,000 | $75,371,000 |
| PUBLIC CONSTRUCTION BUILDING | | | | |
| City, County, State, Federal | $79,581,000 | $78,004,000 | $220,741,000 | $67,942,000 |
| Housing | 6,474,000 | 9,599,000 | 70,552,000 | 40,386,000 |
| Schools | 2,477,000 | 8,226,000 | 13,306,000 | 10,847,000 |
| | $88,532,000 | $95,829,000 | $304,599,000 | $119,175,000 |
| ENGINEERING | | | | |
| Dams, Drainage, Earthwork, Airports | $30,581,000 | $101,643,000 | $57,899,000 | $27,105,000 |
| Federal, County, Municipal Electric | 1,992,000 | 69,615,000 | 15,054,000 | 29,665,000 |
| Sewers and Waterworks | 999,000 | 22,779,000 | 8,136,000 | 4,719,000 |
| | $33,572,000 | $194,037,000 | $81,089,000 | $61,489,000 |
| ROADS, STREETS AND BRIDGES | $23,090,000 | $54,416,000 | $76,745,000 | $73,965,000 |
| TOTAL | $373,914,000 | $856,321,000 | $1,152,381,000 | $413,721,000 |

# Important New Industrial Plants and Expansions in the South During June

## ALABAMA

**BIRMINGHAM**—expansion program—The program under which the Southern Natural Gas Co. will increase its daily gas delivery capacity of 45,000,000 cubic feet daily, will include: new 14-in. pipe line, extending 130 miles from the company's recently acquired Logansport field with 6 new wells completed having an open flow capacity of approximately 700,000,000 cubic feet daily, to connect with the system at Perryville near Monroe, both Louisiana; pipe lines paralleling present lines under the Mississippi River, near Vicksburg, Miss., to comprise 102 miles of 22-in. pipe, 18½ miles of 12-in. pipe, and an increase in facilities of 8 compressor stations; this increase to be made by the addition of 18 gas engine driven compressors totaling 17,300 h.p.; drilling of additional gas wells on 12,000 acres leased land in Logansport field and erection of a dehydration plant for removal of moisture in the gas from the latter field; estimated expenditure of $7,000,000; Ford, Bacon & Davis, 39 Broadway, New York, are general contractors.

**ENSLEY** — furnaces relined — Tennessee Coal, Iron & Railroad Co., E. D. LeMay, completely relining and enlarging, by forces of company, of No. 2 furnace; capacity will be increased to 725 tons per day.

**GADSDEN**—ordnance plant—Alabama Division of Lansdowne Steel & Iron Co, Morton, Pa., will operate $6,000,000 ordnance plant, under construction by Government, for manufacturing 105 mm. shells; buildings to be completed by Sept.

**GORGAS** — expansion — Alabama Power Co., Thomas W. Martin, Pres., Birmingham, has awarded contract to General Electric Co., Schenectady, New York, for generator installation in a second 60,000 kw. unit to be constructed at Gorgas No. 2 steam plant of the company in Walker County, be ready for operation May 1, 1943; inquiries for Gorgas equipment not already purchased will go out in about 30 days; construction will begin about May 1942; sub-surface construction already in place; construction bids will not be requested for some months; at time of construction of No. 2 plant, in 1930, some of the foundations were laid for additional units and intake and discharge tunnels were provided of capacity for 3 additional units; new unit will be built to operate at 3600 revolutions per minute; Gorgas unit, which will be rated at 60,000 kw., 96 per cent power factor, will operate at a steam pressure of 850 pounds per square inch; will require a boiler capacity of 600,000 pounds of steam per hour; boiler will burn powdered coal.

***Left—Excavation proceeded on the second unit of Georgia Power Company's Plant Arkwright as the first unit was placed in operation on the Ochmulgee River, Macon, Ga. The completed first unit, where a 40,000-kilowatt generator is installed, is behind the temporary partition wall in the background. Completion of the second unit is scheduled for May, 1942, and a third generating unit of the same size has been ordered for installation in 1943. A million kilowatt - hours daily was added to Georgia's power supply when the first unit went in service, after but a few hours trial instead of the usual three-week tests, because of the reduced hydro supply due to drought conditions.***

## Contracts Awarded

## ARKANSAS

**EL DORADO**—gas plant—Lion Oil Refining Co. started work on hydrogen sulfide removal plant in Magnolia fields of Columbia county to make south Arkansas sour gas usable for industrial consumption; daily capacity 15,000,000 cubic feet; will be used for power in company's production properties in Smackover and other fields and in company's 17,000 bbl. refinery at El Dorado; gas compressor station is also under construction.

## FLORIDA

**TAMPA**—building—Tampa Shipbuilding Co., Grant, let contract to C. A. Fielland, 1907 Grand Central Ave., for navy office building at the shipyards; following were awarded subcontracts: Florida Steel Products Inc., 215 S. Rome Ave., reinforcing iron; Florida Material Co., 54th and Road 17, concrete blocks; Knight & Wall, Tampa and Lafayette, finish hardware; Builders Service, Stovall Professional Bldg., bar joists; Tampa Roofing & Metal Works, 2907 Florida Ave., roofing and metal work; Thompson-Brice Lumber Co., 1516 Lozano, mill work; Ford Plumbing Co., 3807 Florida Ave., plumbing; Bigby Electric Co., 305 Franklin, electric work; M. C. Geiger, 515 E. Elm, painting, all Tampa, Fla., M. Lee Elliott, Penthouse Citizens Bldg., Architect.

## GEORGIA

**DOERUN**—gin—B. B. and J. W. Toney are constructing a modern gin; machinery consisting of four Continental 80-saw gin stands with full equipment of auxiliary machinery.

**SAVANNAH** — meat packing — Meddin Brothers, Savannah Abattoir, Louisville Rd. let contract to Edwin Braun, 710 E. 50th St. for addition to meat packing plant; cost $60,000; 1-story; brick and reinforced concrete; 58x167 feet.; will contain sausage manufacturing and canning plant, cold storage department, 6 smoke houses, etc.; additional contracts will be awarded for sausage making and canning equipment, tracks and conveying equipment, air conditioning of offices and installation of complete refrigeration plant; designed by Carl F. Schloemann, 6329 San Bonita St., St. Louis, Mo., Architect and Engineer; Levy & Clarke, Liberty Bank & Trust Building, Savannah, Associate Architects.

## KENTUCKY

**HENDERSON**—ammonia plant—Pioneer Contracting Co., has contract for 2 office buildings, repair shop and first aid station at the $15,484,195 anhydrous ammonia plant of Atmospheric Nitrogen Co. of New York; estimated cost of these structures, $75,000; company has been granted a supplemental contract by War Dept. for construction of an electric generating plant at estimated cost of 1,100,000.

**LOUISVILLE**—plant—Henry Bickel Co., 435 Garden St., received contract for construction of plant to manufacture calcium carbide and 2 furnace units for National Carbide Corp., 60 E. 42nd St., New York; cost $1,000,000.

## LOUISIANA

**MINDEN**—shell loading plant—War Department let contract to Silas Mason Co., Inc., 500 5th Ave., New York, for $30,000,000 shell loading plant on cost-plus-fixed-fee basis; company also plans operation of plant; will cover approximately 10,000 acres between Doyline and Minden.

## MARYLAND

**BALTIMORE**—wire mill—Rustless Iron & Steel Co., 3400 E. Chase, let contract to Cummins Construction Corp., 803 Cathedral St., for 1-story wire mill, 1001 Edison Highway; private plans; cost $75,000.

## MISSISSIPPI

**LAUREL**—expansion—Masonite Corp., 111 W. Washington St., Chicago, Ill., expending approximately $1,500,000 for expansion and improvements to plant at Laurel, 4 major projects included; $800,000 is being expended for steam turbine power plant to go into service Aug. 15, generators to supply about 13,500 kw. of electric power; more than $600,000 is being expended for constructing and equipping a multi-story addition to what was formerly the Masonite plastics plant, now manufacturing Masonite die stock; addition will double its capacity; new press capacity is being added, humidifying units being lengthened and enlarged; increased production and speed-up changes in insulation board plant now under way to permit this mill to manufacture hardboard products.

## MISSOURI

**POPLAR BLUFF**—Booster Station—Mississippi River Fuel Corp. started work on $150,000 pressure booster station, 8 miles south of here; company pipes natural gas from Monroe, La. to St. Louis metropolitan area.

**ST. JOSEPH**—addition—Western Tablet & Stationery Co., 11th St. and Mitchell Ave., let contract to Sheffield Steel Corp., Sheffield Sta., Kansas City, for structural steel framing for proposed addition; 6-stories and basement; 2 sections; 160x225 ft. and 54x140 ft.; cost $350,000; Lehr Construction Co., 22nd & Frederick Sts., St. Joseph, General Contractor; John S. Metcalf Co., 111 W. Jackson Blvd., Chicago, Ill., Consulting Engineer.

## OKLAHOMA

**Pipe line**—Gulf Oil Corp., Gulf Bldg., Pittsburgh, Pa, let following contracts for laying 13 loops on its 10-inch pipe line from Jenks, south of Tulsa, to Dublin, Ind.; Williams Brothers Corp., National Bank of Tulsa, Tulsa, has contract for 3 loops in Oklahoma; Jones & Brooks, Inc., 7 W. 18, Tulsa, has contract for 6 loops in Illinois and Indiana; B. & M. Co., Petroleum Bldg., Oklahoma City, has contract for the remaining 4 loops in Missouri.

## TENNESSEE

**CHATTANOOGA** — expansion — Tennessee Products Corp., American National Bank Bldg., Nashville, has permit for doubling capacity of Alton Park plant; cost $1,500,000; increase output of coke for national defense work; additional supply to be taken by Aluminum Company of America at Alcoa, Tenn.; E. O. Morse, engineer in charge of work; Wilputte Coke Oven Corp., 40 Rector St., New York, and 4800 Central Ave., Chattanooga, has contract for constructing 20 coke ovens to carbonize 450 tons of coal daily.

**CHATTANOOGA** — powder plant — War Department selected site, 7200 acres on south side of river between East Chattanooga and Ooltewah, for erection of $39,000,000 explosives plant; manufacture trinitrotoluene; contract for constructing and operating plant let to Hercules Powder Co., Inc., Wilmington, Del.

**MEMPHIS**—bomber plant— Darin & Armstrong Construction Co., 2041 Fenkel St., Detroit, Mich., received contract for converting Fisher Body Plant from a woodworking plant into plant for manufacture of metal parts for bombers for Defense Plant Corp.; will wreck present brick building; will be operated by General Motors Fisher Division.

## TEXAS

Pipe line—Sinclair Refining Co., Fair Bldg., Fort Worth, let contract to Monarch Construction Co., for building 33-mile, 3-in. gasoline pipe line from its Fort Worth refinery to bulk station in Dallas; company reported to construct bulk plant in Dallas, after completion of pipe line.

**HOUSTON**—bomber landing gear plant—Defense Plant Corp., awarded contract for site and buildings at approximately $3,725,000 for bomber landing gear plant at Polk and Hughes Sts. for Hughes Tool Co., 300 Hughes St.; will operate plant for War Dept.; estimated total cost $12,000,000.

**HOUSTON**—plate shop building— Houston Shipbuilding Corp. let contract to Brown & Root, Inc., 4300 Calhoun Rd. to erect plate shop on Irish Bend Island on Houston Ship Channel; steel; 27x250 ft.; 1-story; cost $95,000.

**LONGVIEW**—gas recycling plant—Lone Star Gas Co., Dallas and Rogers Lacy, Longview, started work on $400,000 gas recycling plant in Gregg County; has site of 16 acres 2½ miles southwest of Longview; capacity 50,000,000 cubic feet of gas daily.

**RIO GRANDE CITY**—plant—Continental Oil Co., c/o C. M. Reed, Division Manager, 1119 Louisiana, will construct plant with capacity of 1,500,000 to 1,750,000 cubic feet per day pressure maintenance, Rincon Field near Rio Grande City; owner builds.

**TEXARKANA**—shell loading plant—John Griffiths Son Construction Co., 228 N. LaSalle St., Chicago, Ill., received contract for constructing loading plant for artillery shells and bombs for War Dept.; cost $45,500,000.

**TEXAS CITY**—chemical plant addition—Carbide & Carbon Chemicals Corp., plans enlargement of chemical plant; Ford, Bacon & Davis, Inc., New York, will handle construction work.

## VIRGINIA

**ELKTON**—plant—C. M. Guest & Sons, Elkton, Va. and Anderson, S. C., general contractor for erecting $500,000 plant on 312 acre site on Shenandoah River, 3 miles south of Elkton, for Merck & Co., Inc., Rahway, New Jersey, let following sub-contracts: Echols Brothers, Inc., Staunton, Va., general excavation; Southern Brick Co., 929 Myers St., brickwork masonry; Sydnor Pump & Well Co.,1310 E. Main St., drilling wells, both Richmond; Anchor Post Fence Co., Franklin National Life Bldg., Greenville, S. C., chain link fence; Spencer White & Prentis, Inc., 10 E. 40th St., New York City, pile driving for power plant; Chicago Bridge & Iron Co., Chicago, Ill., elevated water storage tank; George P. Butler, Jr., 40 E. 49th St., Supervising Architect, Lockwood Greene Engineers, Inc., Engineers, 10 Rockefeller Plaza, both New York.

## WEST VIRGINIA

**HUNTINGTON** — substation — Appalachian Electric Power Co., 1003 Electric Bldg., Richmond, Va., has preliminary work underway on construction of transformer station northeast corner of 8th Ave. and 8th St.; J. E. Miller has general contract; Rosenblatt and Hunt, 923 Virginia, E., Charleston, contract for electrical structures.

***Below—Work progresses on the new $2,800,000 aircraft plant for Curtiss-Wright Corp., at site of present plant on north side of Lambert-St. Louis field, St. Louis, Mo. Ultimately to be the largest aircraft manufacturing plant in its area for mass production of military and naval planes, the new plant will be eight times the size of the old, containing about 1,200,000 square feet of floor space. Construction is proceeding from front to back and as sections of the new plant are completed, manufacturing operations will be transferred, so that it will be unnecessary to dismantle the present factory until departments have been moved. The new plant consists of a 170 by 400-foot, 2-story and basement office and engineering building; a 1,104 by 603-foot one-story factory building with partial basement, and boiler house, personnel building and oil house. Approximately 12,000 men will be employed in producing army and navy training planes and the huge CW 20, largest twin-engined transport plane now in final flight tests. The plant is expected to swing into production by fall.***

**HUNTINGTON**—foundry, etc.—American Car & Foundry Co., will soon begin work on construction of modern buildings to replace wheel foundries and present offices; foundry will be 139x165 ft. steel and brick; equipped with electrically driven fan-type ventilators; will contain core room, blower room, wheel pits, foreman's office and wheel storage platforms; a new cupola charging house of masonry and steel, 38x42 ft. 80 ft. high will also be built in conjunction with the foundry; office building will be erected adjacent to the foundry and of modern design with complete locker and sanitation facilities; Neighborgall & Leach, General Contractors, Fifth Avenue Arcade Bldg.

# Contracts Proposed

## ALABAMA

Power unit—Alabama Power Co., Thomas W. Martin, Pres., Birmingham, plans construction of a 60,000 kw. unit at its Gorgas steam plant; estimated cost of this unit and steam plant expansion at Mobile, $11,000,000.

**ATTALLA**—Aircraft Shells—Attalla Compress Buckle Co., has been awarded a $1,000,000 contract by War Department for manufacture of 20-millimeter aircraft shells; portion of machinery purchased and installed, additional equipment to be added.

**CHILDERSBURG**—addition—War Dept. authorized $24,675,000 for an addition to Alabama Ordnance Works; 40 miles southeast of Birmingham in Talladega County; amount will be used for construction and equipment; will increase productive capacity for manufacture of TNT, DNT and tetryl; no additional land to be purchased.

**DECATUR**—expansion—Alabama Hosiery Mill, Inc., plans $75,000 building for manufacture of nylon hosiery.

**GADSDEN**—shell forging plant—War Dept. may expand $23,000,000 shell forging plant now under construction, into full federal arsenal, costing approximately $70,000,000.

**HOLT**—blast furnace—Tennessee Coal, Iron & Railroad Co., Birmingham, acquired blast furnace near Holt; ready for production in 90 days; iron ore will be shipped from company's Red Mountain mines, near Birmingham; coke will be obtained from ovens operated by Warrior River Coke Co.; estimated daily output 325 net tons when producing foundry iron.

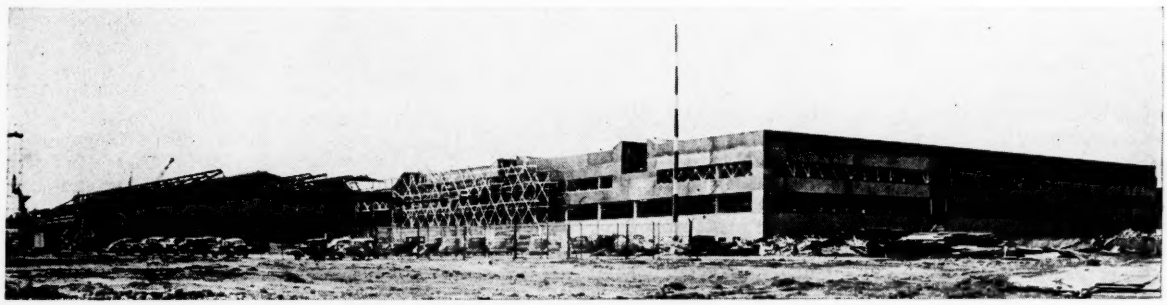
**MOBILE** — shipbuilding — Mobile Shipyards, Inc., organized by A. L. Staples, Staples Pake Bldg., and associates plan establishing a 6-way shipyard on 39 acre site on Mobile River, provided ship contracts can be obtained from federal government.

## ARKANSAS

**HOPE**—acceptance proving grounds—War Department selected site for $15,000,000 acceptance proving grounds to test ordnance equipment.

**JACKSONVILLE** — ammunition loading plant—Ford, Bacon & Davis, New York, tentatively selected to supervise construction of $33,000,000 ammunition loading plant near Jacksonville for government.

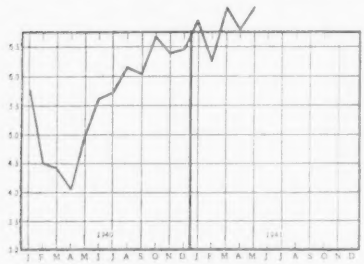
(*Continued on page 56*)



# Industrial Production Trends

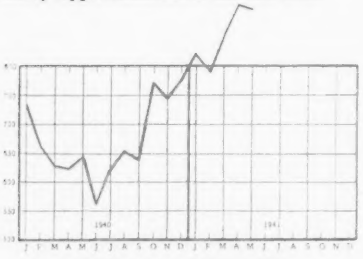
INDUSTRIAL production for May, on the 1935-1939=100 adjusted index, was 149 according to preliminary estimates, which is the highest point reached for many years past. This month makes up for the decline suffered during April when strikes were responsible for the decline from March.

Steel, along with other products, showed a marked increase for the month, total production amounting to 7,101,759 tons. But, high as this figure



**STEEL INGOT PRODUCTION**
***(Millions short tons)***

is, it is still almost 30,000 tons below the high figure reached in March. Activity in the steel industry during May is clearly indicated by the 99.3% capacity rate of operation. Total steel production for the five months of 1941 closely approximates 35 million tons.



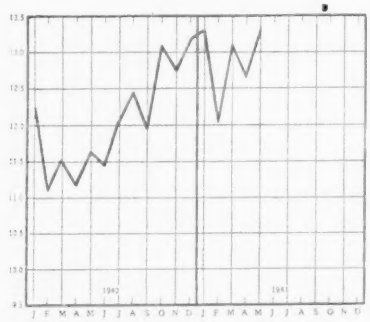
**COTTON CONSUMPTION**
***(Thousands of bales)***

Cotton consumption, which reached its highest point in April with 920,142 bales, declined very slightly to 918,902 bales in May. The latter figure however is still unusually high and if continued, as may be expected, will bring the year's total close to, if not exceeding, ten million bales.

**INDUSTRIAL PRODUCTION**
***(Index 1935-39=100)***

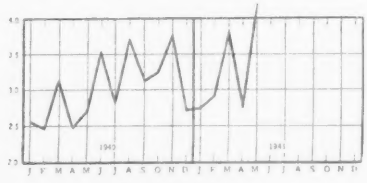
Electric power production again shot up during May to 13,290,609,000 kw. hours, almost equaling the high figure reached in January. With demands being placed upon electricity in the defense program, previous records will undoubtedly be shattered in months to come. As of May 31 the total capacity of generating plants was 42,222,166 kw., a net gain of 180,664 kw. during the month.

Carloadings, which declined to 2,794,-



**ELECTRIC POWER PRODUCTION**
***(Billions kilowatt hours)***

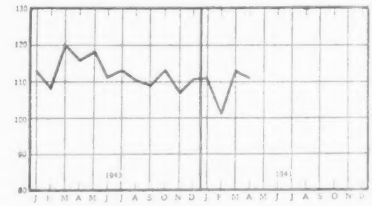
000 in April, jumped to 4,161,000 in May, the highest point reached for several years. June carloadings may be expected to approximate those of May. Estimated loadings for the third quarter of 1941 are anticipated to be nearly



**CARLOADINGS**
***(Millions)***

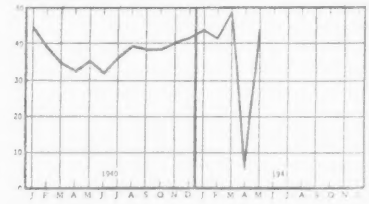
15% higher than the actual loadings of the third quarter of 1940, or a total of 7,273,000 cars.

Though the total production of crude petroleum during April, amounting to



**CRUDE PETROLEUM PRODUCTION**
***(Millions of barrels)***

111,080,000 barrels, was slightly less than that of March, the daily average was 64,000 barrels a day greater than during March. Even so, both the daily average and the total were well below the comparable month of 1940. April,



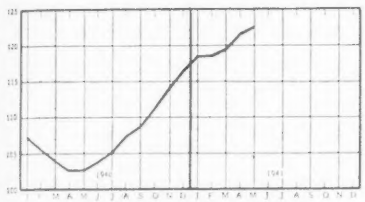
**BITUMINOUS COAL PRODUCTION**
***(Millions of tons)***

however, did put up a record breaking consumption which far outweighed the gain and output. In place of a gain during March of 1,900,000 barrels in crude stocks, there was a decline of nearly 400,000 barrels in April.

Bituminous coal which, due to strikes, had a record low production of 5,975,-000 tons in April, recuperated to the ex-

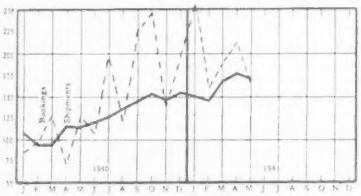
tent of 43,400,000 tons in May. This, however, is still almost five million tons less than the March total and will have to be stepped up still further in order to provide all the coal necessary this year. Preliminary figures for June indicate that coal production is again maintaining its even keel of 10 million tons, or better, per week.

Total non-agricultural employment



**FACTORY EMPLOYMENT**
(*Adjusted index*, 1923-25=100)

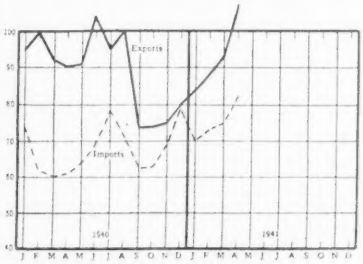
again set a new all-time peak in May, with 38,278,000 persons employed. This is a gain of 600,000 workers over the April figure and 3,115,000 more than May 1940. Factory employment was a major factor in this advance, with contraseasonal gain of 162,000 wage earners or 1.6% above the April figure, and payrolls showed a larger than seasonal increase of $13,370,000 or 5.3%. These are the highest points on record. A



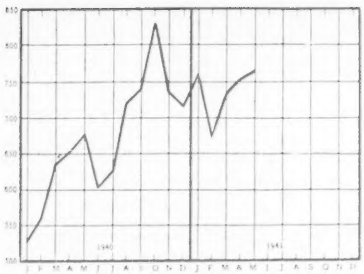

**STRUCTURAL STEEL**
(*Thousands of tons*)

comparison with May 1940 shows factory employment up 21.7% and payrolls up 45.1%.

Structural steel during May declined, both as to bookings and shipments, from the April figure though both were well in advance of the comparable figures for 1940. Shipments totaled 172,730 tons and bookings were 165,186 tons. The backlog of orders scheduled to be




**IMPORTS AND EXPORTS**
(*Adjusted index* 1923-25=100)



**SOUTHERN PINE PRODUCTION**
(*Million board feet*)

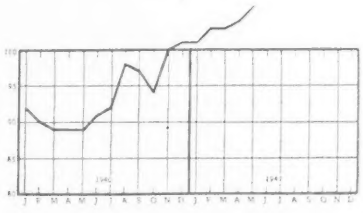
shipped during the next four months totals 718,897 tons.

Import and export figures, which have been delayed during the past two months, now show that April, on the 1923-1925=100 adjusted index, was 109 for exports and 82 for imports, the

**AUTOMOBILE FACTORY SALES**
(*Thousands*)

highest figures recorded at any time since the beginning of 1940.

Southern pine production, which totaled 753 million board feet in April, again advanced slightly in May and, though this is the highest point reached in 1941 and is almost 100 million board feet more than the comparable figure of May 1940, it is still well below the 827 million board feet high reached last



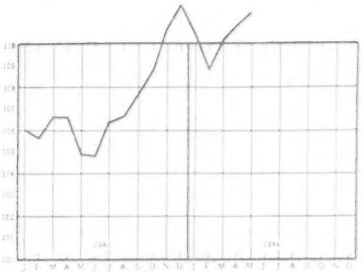
**DEPARTMENT STORE SALES**
(*Adjusted index* 1923-25=100)

October.

Factory sales of automobiles, which ordinarily start their seasonal decline in May, this year reversed the procedure and reached a high of 518,736 which is not only the highest point this year but the highest point recorded for several years past.

Retail trade, as reflected in the 1923-1925=100 adjusted index of department store sales, climbed to new levels during May, being 106 compared with 104 in April. In one or two districts the figure declined but, on the whole, retail trade is relatively staple, with a slight increase which is expected to continue.

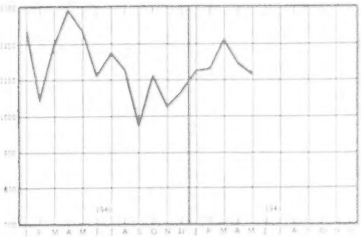
U. S. Treasury bonds, which reached their highest point of 111.8 last December, declining slightly thereafter, again



**U. S. TREASURY BONDS**
(*Average price per $100 bond*)

rose during May to an average of 111.4. While the future of stocks and bonds generally remains relatively uncertain, there is not much likelihood of any great decline from the present price of Treasury bonds.

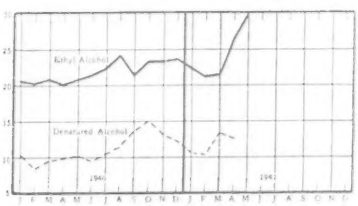
Commercial failures declined still further during May from the April figure to 1,119, with a corresponding de-



**COMMERCIAL FAILURES**
(*Total number*)

cline in liabilities which is the lowest point reached for more than a year, amounting to $10,065,000.

Both denatured and ethyl alcohol production rose sharply during May, denatured alcohol amounting to 14,714,000 gallons and ethyl alcohol reaching a new high for some time past of 29,606,000 gallons, thus reflecting the sharp rise in chemicals generally.




**ALCOHOL PRODUCTION**
(*Millions of gallons*)

# National Defense Program Awards in the South

## ALABAMA

Value of Total Awards July 1, 1940 to June 16, 1941

| | |
|---|---|
| Army Contracts | $113,712,078 |
| Navy Contracts | 33,773,415[1] |
| U. S. Maritime Commission Emergency Ship Program | 20,822,500 |
| Civil Aeronautics Admin. (Commerce) (Airport Expansion Program) | 116,200 |
| W.P.A. Defense Projects (F.W.A.) | 3,073,046 |
| U. S. H. A. Defense Housing Projects (F. W. A.) | 2,787,553 |
| Public Buildings Admin., Def. Housing (F. W. A.) | 1,409,000 |
| Office of Education Defense Training (F. S. A.) | 979,200 |
| National Youth Administration (F. S. A.) (Defense Training Funds for 1941) | 1,258,008 |
| Defense Plant Corporation (F. L. A.) | 9,801,211 |
| Reconstruction Finance Corporation (F. L. A.) | 19,068,188 |

**CONTRACTS AWARDED MAY 16 TO June 15**

**Quartermaster Corps (Army)**

Benham Underwear Mills, Scottsboro, 250,000 cotton drawers, $72,867.

The Andala Co., Andalusia, 50,000 O. D. flannel shirts, $26,000.

Choctaw Boat Works, Inc., Mobile, 26-ft. motor whale boats, $30,000.

West Point Mfg. Co., Fairfax, 104,000 bath towels, $29,193.

The Andala Co., Andalusia, 175,000 khaki cotton shirts, $89,250.

J. W. Wells Lumber Co., Montgomery, 40,000 BM ft. hardwood lumber, $3,610.

Greeson Mfg. Corp., Montgomery, 836 tool chests, $3,754.

**Supplies & Accounts (Navy)**

Kilby Steel Co., Anniston, star cutters, $229,477.

**Tennessee Products Corporation, Nashville, Tenenssee, has been granted $375,000 by the Defense Plant Corporation in order to rehabilitate and carry out plant improvements for the manufacture of ferro-manganese.**

## ARKANSAS

Value of Total Awards July 1, 1940 to June 16, 1941

| | |
|---|---|
| Army Contracts | $18,539,850 |
| Navy Contracts | [1] |
| W. P. A. Defense Projects (F.W.A.) | 2,342,364 |
| Office of Education Defense Training (F. S. A.) | 601,755 |
| National Youth Admin. (F. S. A.) (Defense Training Funds for 1941) | 863,373 |
| Reconstruction Finance Corporation (F. L. A.) | 151,845 |

**CONTRACTS AWARDED MAY 16 TO JUNE 15**

**Corps of Engineers (Army)**

The Whitaker Co., Prescott, Southern pine, Aircraft Assembly Plant, Tulsa, Okla., $8,122.

## FLORIDA

Value of Total Awards July 1, 1940 to June 16, 1941

| | |
|---|---|
| Army Contracts | $23,634,076 |
| Navy Contracts | 74,028,152[1] |
| Civil Aeronautics Administration (Commerce) (Airport Expansion Program) | 177,200 |
| W. P. A. Defense Projects (F.W.A.) | 15,891,907 |
| U. S. H. A. Defense Housing Projects, (F. W. A.) | 2,064,461 |
| Public Buildings Admin., Def. Housing (F. W. A.) | 2,248,200 |
| Office of Education Defense Training (F. S. A.) | 677,349 |
| National Youth Admin. (F. S. A.) (Defense Training for 1941 | 652,491 |
| Reconstruction Finance Corporation (F. L. A.) | 4,254,485 |

**CONTRACTS AWARDED MAY 16 TO JUNE 15**

**Ordnance (Army)**

Metal Products Co., Miami, Fuze, $516,000.

**Corps of Engineers (Army)**

Florida Portland Cement Co., Tampa, Portland cement, MacDill Field, $22,400.

Sherman Concrete Pipe Co., Tampa, concrete sewer pipe, MacDill Field, $3,076.

Florida Pipe & Supply Co., Inc., Jacksonville, black steel pipe, Drew Field, Tampa, $5,987.

**Yards & Docks (Navy)**

Wright Mfg. Div. of American Chain & Cable Co., Inc., York, Pa., 2-ton bridge crane for Naval Air Station, Jacksonville, $2,514.

Harnischfeger Corporation, Milwaukee, Wis., two 5-ton bridge cranes, one each for Naval Air Stations at Miami and Jacksonville, $9,168.

**The Fisher Body Division of General Motors Corporation, Memphis, Tennessee (a sub-contractor to North American Aviation Corporation, Kansas City, Kansas), has been granted by the Defense Plant Corporation $3,957,029 to acquire additional machinery and equipment needed in the manufacture of medium bombers, unassembled at the Memphis plant.**

## GEORGIA

Value of Total Awards July 1, 1940 to June 16, 1941

| | |
|---|---|
| Army Contracts | $51,562,985 |
| Navy Contracts | 3,584,236[1] |
| W. P. A. Defense Projects (F.W.A.) | 5,367,846 |
| U. S. H. A. Defense Housing Projects (F. W. A.) | 1,704,833 |
| Public Buildings Admin., Def. Housing (F. W. A.) | 2,452,500 |
| Office of Education Defense Training (F. S. A.) | 1,184,434 |
| National Youth Admin. (F. S. A.) (Defense Training Funds for 1941) | 1,426,365 |
| Reconstruction Finance Corporation (F. L. A.) | 68,701 |

**CONTRACTS AWARDED MAY 16 TO JUNE 15**

**Quartermaster Corps (Army)**

Rome Mfg. Co., Rome, 35,000 twill trousers, $22,693.

Classic City Overall Co., Athens, 25,000 twill trousers, $16,250.

The Big Ace Mfg. Corp., Athens, 50,000 O. D. flannel shirts, $25,000.

Thomson Co., Millen, 220,000 O. D. flannel shirts, $111,648.

Carwood Mfg. Co., Cornelia, 200,000 O. D. flannel shirts, $102,000.

Pearce-Williams Contracting Co., Columbus, reservoir at Fort Benning, $31,729.

Lowell Bleachery, South Griffin, 300,000 bath towels, $79,500.

Perry Bros. Mfg. Co., Athens, 150,000 khaki cotton shirts, $75,000.

**Corps of Engineers (Army)**

The F. A. Klaine Co., Cincinnati, Ohio, No. 5 (coal) army ranges, U. S. Flying School No. 1, Macon, $2,600.

Southern Wood Preserving Co., Atlanta, creosoted railroad ties, $2,657.

**Ordnance (Army)**

Aragon Mills, Aragon, O. D. cotton duck, $12,654.

**Reynolds Alloys Company of Lister, Alabama, has been granted $3,000,000 by the Reconstruction Finance Corporation as working capital for the aluminum plant located at Lister.**

**Chemical Warfare (Army)**

United States Rubber Co., Hogansville, cotton duck, $337,500.

**Supplies & Accounts (Navy)**

Callaway Mills, LaGrange, medium cotton canvas, $286,215.

American Art Metals Co., Inc., Atlanta, trucks, racks, conveyors and stands, $30,424.

J. M. Tull Metal & Supply Co., Inc., Atlanta, floor hair brushes, $5,404.

National Traffic Guard Co., Atlanta, star cutters, $43,000.

## KENTUCKY

Value of Total Awards July 1, 1940 to June 16, 1941

| | |
|---|---|
| Army Contracts | $33,366,416 |
| Navy Contracts | 9,423,164[1] |
| Civil Aeronautics Admin. (Commerce) (Airport Expansion Program) | 16,000 |
| W. P. A. Defense Projects (F.W.A.) | 2,822,422 |
| Public Buildings Admin., Def. Housing (F. W. A.) | 1,935,000 |
| Office of Education Defense Training (F. S. A.) | 844,690 |
| National Youth Admin. (F. S. A.) (Defense Training Funds for 1941) | 1,095,068 |
| Defense Plant Corporation (F.L.A.) | 2,920,580 |
| Reconstruction Finance Corporation (F. L. A.) | 40,075,000 |

**CONTRACTS AWARDED MAY 16 TO JUNE 15**

**Quartermaster Corps (Army)**

Hopkinsville Clothing Mfg. Co., Hopkinsville, 35,000 twill trousers, $21,266.

James Barker, Latonia, 858 saddle trees, $3,432.

Peaslee-Gaulbert Corp., Louisville, 4,000 dry cell batteries, $1,170.

Louisville Tin & Stove Co., Louisville, vegetable graters, dippers, and measures, $50,552.

Belknap Hardware & Mfg. Co., Inc., Louisville, dish pans and flour sieves, $8,658.

General Shoe Lace Co., Louisville, 36,000 prs. brown cotton laces, $2,462.

Robert S. Dawson Co., Louisville, 10,000 BM ft. hardwood lumber, $485.

**Supplies & Accounts (Navy)**

Standard Oil Co. of Kentucky, Louisville, Gasoline, $453,301.

**Medical Corps (Army)**

The Stewart Iron Works Co., Inc., Covington, porch benches, $8,666.

**Air Corps (Army)**

Standard Oil Co., (Inc. in Kentucky), Louisville, engine fuel, $2,195,125.

**RFC (Federal Loan Agency)**

The Murphy Elevator Co., Louisville—Additional loan authorized, in connection with a contract for elevators for the Navy, $35,000.

**A supplemental authorization of $415,969 has been granted by the Defense Plant Corporation to Reynolds Metals Company, Louisville, Kentucky, where extruded aluminum products are being made for use in the aircraft industry.**

## LOUISIANA

Value of Total Awards July 1, 1940 to June 16, 1941

| | |
|---|---|
| Army Contracts | $25,767,824 |
| Navy Contracts | 4,918,760[1] |
| U. S. Maritime Commission Emergency Ship Program | 42,341,000 |
| Civil Aeronautics Admin. (Commerce) (Airport Expansion Program) | 340,000 |
| W. P. A. Defense Projects (F.W.A.) | 6,686,265 |
| Public Buildings Admin., Def. Housing (F. W. A.) | 855,500 |
| Office of Education Defense Training (F. S. A.) | 697,846 |
| N. Y. A. (F. S. A.) Defense Training Funds for 1941 | 994,699 |
| Defense Plant Corporation (F. L. A.) | 125,000 |

**CONTRACTS AWARDED MAY 16 TO JUNE 15**

**Corps of Engineers (Army)**

Louisiana & Arkansas Railway Co., Alexandria, relay rails, $30,000.

Mechanical Equipment Co., New Orleans, salt water reclaimers, $11,600.

R. E. Swinney & Son, Baton Rouge, rental of one dragline, Coldwater River Cutoff, near Savage, Miss., $24,720.

Burkes Bros., New Orleans, construction of steam plant, Brockley Field, Mobile, Ala., $81,067.

**Supplies & Accounts (Navy)**

Woodward Wight & Co., Ltd., New Orleans, carbon steel twist drills, $27,525.

**Quartermaster Corps (Army)**

Equitable Equipment Co., New Orleans, 55-ft. steel tug, $39,250.

Famous-Sternberg, Inc., New Orleans, 50,000 O. D. flannel shirts, $25,487.

[1] Secretary of the Navy, Frank Knox announced June 4, 1941, that in the interests of security, press releases concerning contracts between the Navy Department and individual contractors will be discontinued. Information regarding contracts will be available to persons having legitimate business with the Navy Department and such information may be obtained from the Bureaus issuing the contracts.

**Louisiana Pants Mfg. Co., Inc.**, New Orleans, 50,000 Khaki cotton shirts, $25,500.

## MARYLAND

**Value of Total Awards July 1, 1940 to June 16, 1941**

| | |
|---|---|
| Army Contracts | $210,697,719 |
| Navy Contracts | 132,131,098[1] |
| U. S. Maritime Commission Emergency Ship Program | 104,747,375 |
| Farm Security Admin. (Agr.) (Defense Housing) | 746,067 |
| W. P. A. Defense Projects (F. W. A.) | 5,422,247 |
| U. S. H. A. Defense Housing Projects (F. W. A.) | 1,230,546 |
| Public Building Admin., Def. Housing (F. W. A.) | 6,235,899 |
| Office of Education Defense Training (F. S. A.) | 1,037,945 |
| National Youth Admin. (F. S. A.) (Defense Training Funds for 1941) | 692,354 |
| Defense Plant Corporation (F.L.A.) | 1,886,415 |
| Reconstruction Finance Corporation (F. L. A.) | 1,025,350 |

**CONTRACTS AWARDED MAY 16 TO JUNE 15**

**Air Corps (Army)**

**Pangborn Corporation**, Hagerstown, sand blast rooms, $20,806.

**Quartermaster Corps (Army)**

**S. Rosenbloom, Inc.**, Baltimore, 150,000 cotton drawers, $37,126.

**B. & O. Mfg. Co.**, Baltimore, 50,000 twill jackets, $34,466.

**Casey Jones, Inc.**, Baltimore, 78,000 twill jackets $58,500.

**Vinton Construction Co.**, Silver Spring, install generator set in Water Filtration Plant at Big Bethel, Va., $23,500.

**Charles D. Briddell, Inc.**, Crisfield, 10,000 butcher cleavers, $11,667.

**S. Rosenbloom, Inc.**, Baltimore, 200,000 mattress covers, $240,000.

**S. Rosenbloom, Inc.**, Baltimore, 550,000 pr. twill trousers, $357,500.

**S. Rosenbloom, Inc.**, Baltimore, 385,000 twill jackets, $275,126.

**B. & O. Mfg. Co.**, Baltimore, 200,000 twill jackets, $146,854.

**The Parent Metal Products Co.**, Philadelphia, Pa., steel cabinets and shelving, Ordnace Training Center, Aberdeen Proving Ground, $1,798.

**Ordnance (Army)**

**Revere Copper & Brass, Inc.**, Baltimore, brass, $49,116.

**Triumph Explosives, Inc.**, Elkton, detonator assemblies, $425,000.

**Corps of Engineers (Army)**

**American Bitumul Co.**, Baltimore, paint for Langley Field, Va., $2,255.

**Acme Steel Engineering Co., Inc.**, Baltimore, Test Nets, $2,450.

**The Linen Thread Co., Inc.**, Baltimore, camouflage nets, $166,418.

**The Maryland Drydock Co.**, Baltimore, repairing seagoing dredge, $106,076.

**Engineering & Research Corporation, Riverdale, Maryland, has been awarded $201,415 by the Defense Plant Corporation to be applied in construction and equipment for the manufacture of machine tools, propellers and other aircraft parts.**

**Chemical Warfare (Army)**

**The O'Sullivan Rubber Co., Inc.**, Hagerstown, outlet valves, $10,000.

**Parker Metal Decorating Co., Inc.**, Baltimore, Tinplate, $8,990.

**Signal Corps (Army)**

**Graybar Electric Co., Inc.**, Point Breeze, cable, $218,024.

**Supplies & Accounts (Navy)**

**Triumph Explosives, Inc.**, Elkton, aircraft engine starter cartridges, $102,730.

**Rustless Iron & Steel Corp.**, Baltimore, welding quality bar strip C-R steel, $46,954.

**Revere Copper & Brass, Inc.**, Baltimore, sheet copper, $102,802.

**The Whitaker Paper Co.**, Baltimore, blotting and wrapping paper, $14,138.

**Mineral Pigments Corp.**, Muirkirk, yellow zinc, $6,970.

**Koppers Co.**, American Hammered Piston Ring Div., Baltimore, piston rings, $5,780.

**Carey Machinery & Supply Co. of Baltimore City**, Baltimore, single surfacer planers; hard planers & jointers; knife grinder & jointer attachments, $7,272.

***The value of all defense contracts awarded by the Army and Navy Departments up till June 15 totaled $14,100,852,258 Of this amount, $3,023,479,227 or nearly 22% has gone to plants in the Southern states. The latter figure is based upon the state to which the order is given and does not take into account the large amount of defense work being done in southern plants whose head office is located outside the South.***

**Revere Copper & Brass, Inc.**, Baltimore, naval & commercial brass & plain brass angles, $762,961.

**Mt. Vernon Woodberry Mills, Inc.**, Baltimore, canvas, cotton, hard & medium texture, duck, cotton, pipe covering, $792,500.

**Revere Copper & Brass, Inc.**, Baltimore, finished round bar rolled naval brass, $43,847.

**Julien P. Friez & Sons, Div. of Bendix Aviation Corp.**, Baltimore, radio sound equipment, $13,950.

**The Baxter Paper Co.**, Baltimore, Type A, bond typewriting paper, $37,293.

**Baltimore Brushes, Inc.**, Baltimore, flat varnish brushes, $45,540.

**Samuel M. Dell & Co., Inc.**, Baltimore, flat paint brushes, $14,800.

**Pittsburgh Plate Glass Co., Brush Div.**, Baltimore, metal bound paint brushes & chiseled varnish oval brushes, $69,429.

## MISSISSIPPI

**Value of Total Awards July 1, 1940 to June 16, 1941**

| | |
|---|---|
| Army Contracts | $16,377,532 |
| Navy Contracts | 54,013,696[1] |
| W. P. A. Defense Projects (F.W.A.) | 2,652,343 |
| Public Buildings Admin., Def. Housing (F. W. A.) | 148,500 |
| Office of Education Defense Training (F. S. A.) | 860,986 |
| National Youth Administration (F. S. A.) (Defense Training Funds for 1941) | 970,170 |
| Reconstruction Finance Corporation (F. L. A.) | 150,000 |

**CONTRACTS AWARDED MAY 16 TO JUNE 15**

**Quartermaster Corps (Army)**

**Irwin B. Schwabe Co., Inc.**, New Albany, 250,000 O. D. flannel shirts, $129,675.

**Lebanon Shirt Co.**, Union, 145,000 twill jackets, $108,750.

**Lebanon Shirt Co., Inc.**, Union, 200,000 khaki cotton shirts, $100,000.

**Picayune Shirt Factory, Inc.**, Picayune, 400,000 khaki cotton shirts, $200,000.

**Bureau of Ships (Navy)**

**Ingalls Shipbuilding Co.**, Pascagoula, 4 net layers, $50,000,000.

**(U. S. Maritime Commission)**

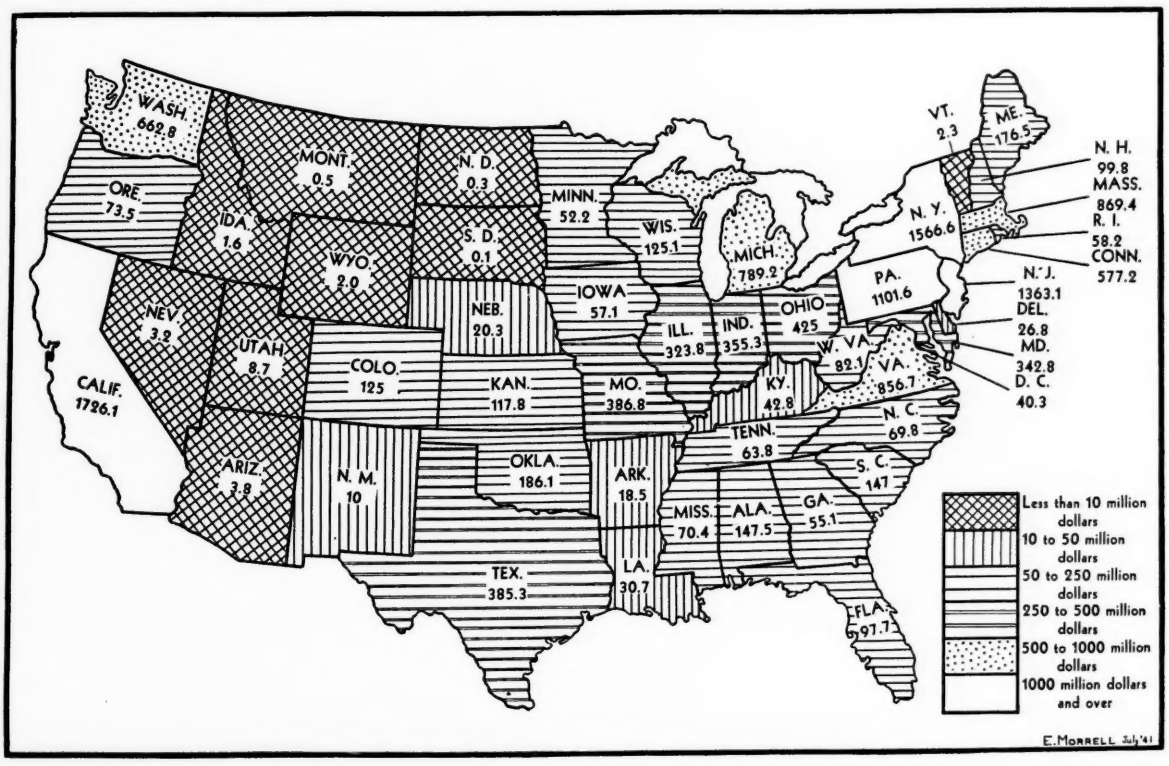
**Ingalls Shipbuilding Corp.**, Pascagoula, 6 C-3 Cargo vessels, (amount of award not available).

## MISSOURI

**Value of Total Awards July 1, 1940 to June 16, 1941**

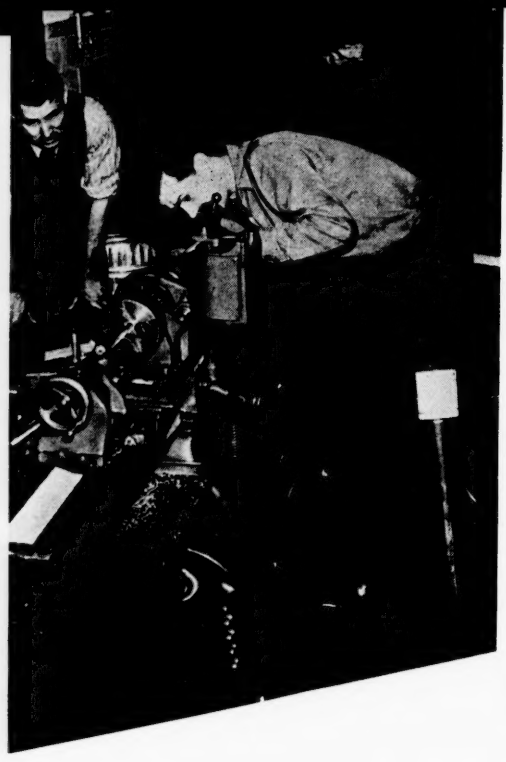
Army Contracts ..... $364,015,044

*(Continued on page 46)*






XUM



# *United States Steel Schools 15,000*

TO meet pressing defense requirements, 15,000 employees of the United States Steel Subsidiaries are now undergoing intensive training for skilled jobs. The employee training program throughout the country, which is by no means a new undertaking among the subsidiary companies of the Corporation, is now one of the largest in the history of American industry.

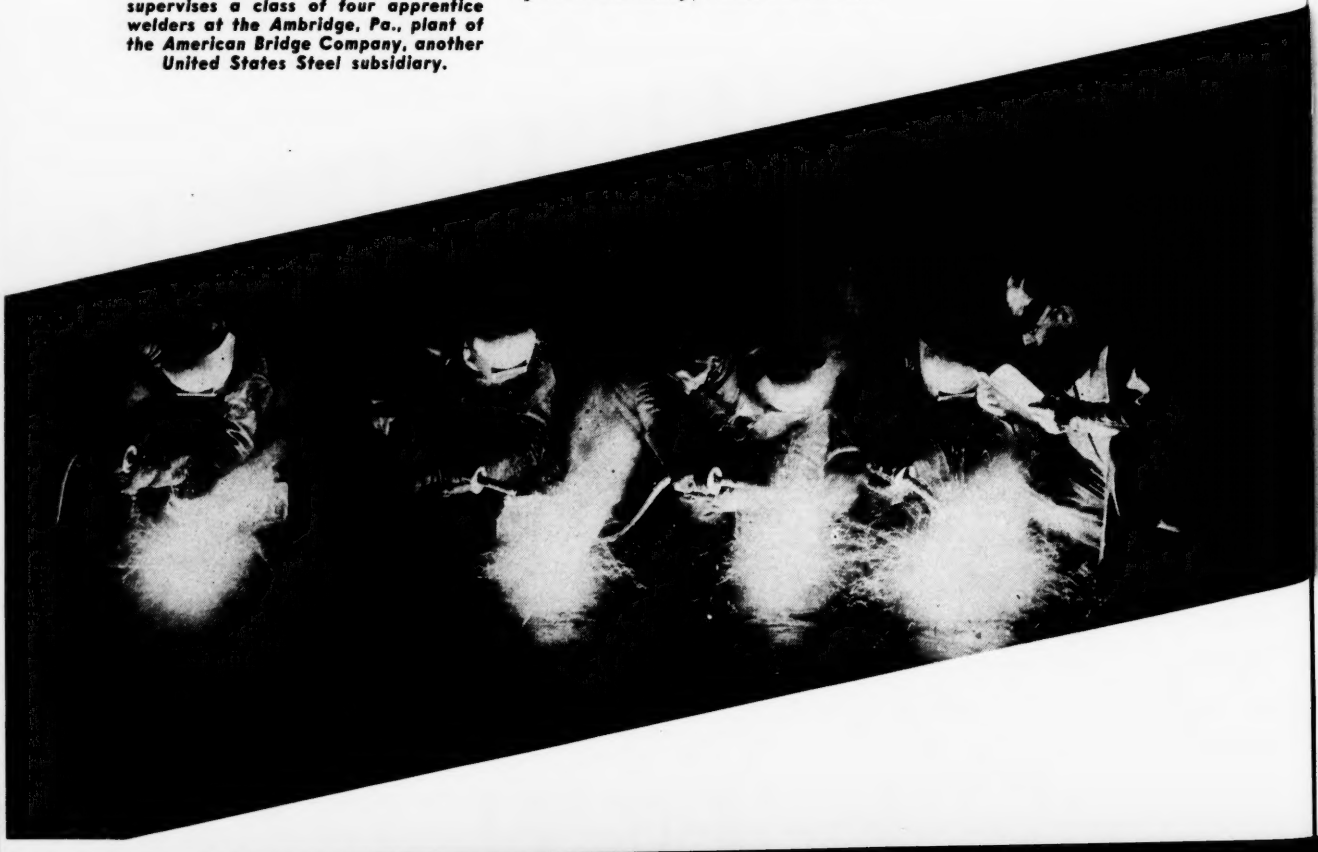
The fact that a training program has long been in effect made it possible for the steel manufacturing subsidiaries of the Corporation to increase their output in a little more than six months time from two-thirds of capacity to full capacity, which, over a 12-month period would produce steel in excess of the entire annual steel output of Germany, based on the latest available figures.

The need for skilled men, not only for the production of steel but also for the manufacture of defense items such as cruisers, destroyers, merchant vessels, armor plate, shell forgings and bomb casings, now being made by United States Steel, is growing each day and many of the trainees are receiving their instructions on the job. Others are given preliminary training before being put on production work.

In this way the need for increasing the army of skilled men is being met as the tempo of defense production increases and thus the training of men to operate the machines of industry is keeping pace

***Above—While Instructor H. M. Lee looks on, Paul Paulsen, apprentice machinist, gets some first hand pointers in the training program of the National Tube Company, United States Steel Corporation subsidiary.***

***Below—Elder Rice, training instructor, supervises a class of four apprentice welders at the Ambridge, Pa., plant of the American Bridge Company, another United States Steel subsidiary.***



# Capacity Increase Larger than German Output Credited to Big Training Program

with the training of men to handle the mechanized equipment of land, sea and air forces.

Employee training is of two kinds—that involved in fitting a man for the next higher job in regular mill operations—and that required to equip a man to handle a special defense operation.

In regular operations there is commonly a natural progression upward from one job to another, depending, of course, on the aptitude, acquired skill and general qualifications of each individual employee.

Through this method, known as "upgrading," it is possible to expand from one shift to three or more shifts, using the original personnel as a nucleus.

In training men for special defense work, such as the manufacture of armor plate, bombs and shells it has been necessary to give large numbers of men intensive instruction in the operation of single purpose machines.

As a preliminary to learning these operations, many of the men are given training in machine operations in the public schools or in the company machine shops. This kind of training as well as the upgrading of men in regular mill operations, is separate from the Subsidiaries' long-range apprenticeship program where more than 1,300 apprentices are now taking four-year courses in steelmaking in steel-fabricating units of United States Steel Corporation.

Heading the list of these Subsidiaries in number of employees undergoing job training of all types are the Carnegie-Illinois Steel Corporation and the National Tube Company, with approximately 4,000 trainees each. The American Bridge Company is next with 2,400, followed by the American Steel and Wire Company with 1,500, and the Tennessee Coal, Iron and Railroad Company with 1,500.

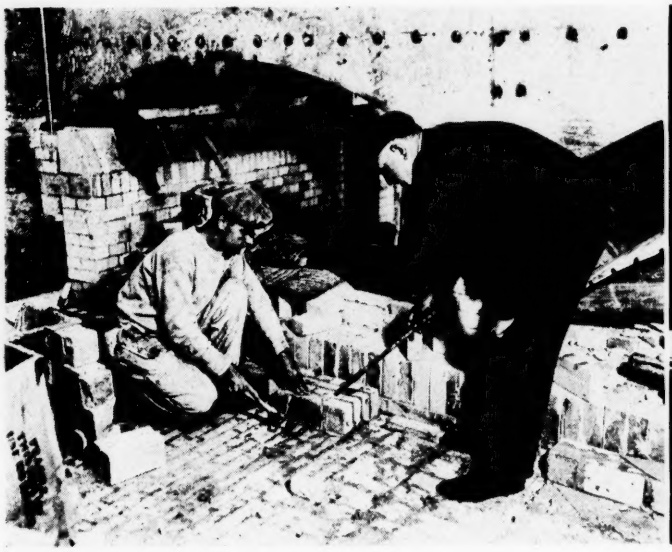
Many employees are supplementing their training by taking academic work. More than 5,000 are receiving classroom instruction directly related to their jobs on company time.

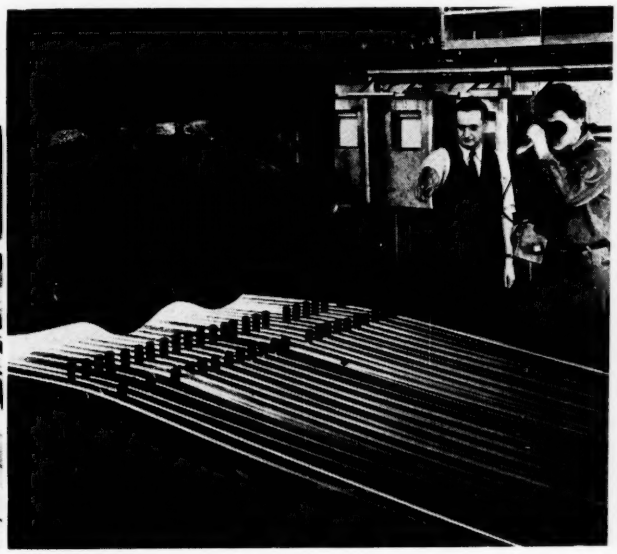
Nearly 10,000 are pursuing studies on their own time. More than 2,500 of these are taking emergency defense courses now being conducted in trade schools, high schools, and colleges under the National Defense Training Program.

***Above—Apprentice Bernard Hines gets some practical experience undercutting a general commutator at the Gary, Indiana, sheet and tin mill of Carnegie-Illinois Steel Corporation, a subsidiary of U. S. Steel.***

***Below left—How to lay brick properly in a soaking pit floor is shown to apprentice Harry Floyd by H. D. Tyson, instructor in a Birmingham plant of U. S. Steel's southern subsidiary, the Tennessee Coal, Iron and Railroad Company.***

***Below right—Herbert Schneider, assistant works metallurgist, instructs technical apprentice Paul Farwell in the use of optical pyrometer at a patenting furnace at Cuyahoga Works, Cleveland, of American Steel and Wire Company, a U. S. Steel subsidiary.***





# PRIORITIES

**Aluminum Scrap Control**—An order bringing aluminum scrap under full priority control was announced last month.

Orders previously issued control the distribution of primary and secondary aluminum, but the order issued today is the first which provides for general priority control of scrap.

The order states that no person after June 10, 1941, shall deliver aluminum scrap for melting or processing purposes unless such delivery has been assigned a preference rating of A-10 or higher, or unless the Director of Priorities has specifically authorized delivery of a non-defense order which is deemed to be directly or indirectly in the interests of national defense.

Provisions of the order do not govern the sale or transfer of scrap between dealers but are intended to apply to the sale of scrap to persons who will melt or otherwise process the material.

In order it is declared that the shortage of aluminum has increased, that more than 90% of all primary and secondary aluminum produced during June will be required for defense, and that an increasing percentage of the entire production of both primary and secondary aluminum will be required for defense during the rest of the year.

The new order revokes Supplementary Order M-1-b, which governed the distribution of low-grade aluminum metal.

The present status of control for aluminum, therefore, is: the distribution of all aluminum in ingot form, in semi-processed form and in fabricated form is governed by priority control. Distribution of scrap by any person to any processor of such scrap is now also controlled. The orders give the Priorities Division complete control of aluminum in all forms, except for transactions between dealers.

As safeguards against diversion of metal in non-essential purposes, the order provides that persons violating the terms of the order can be prevented from obtaining further supplies of aluminum scrap, and also provides that processors accepting deliveries of scrap shall keep complete records as to inventories, purchases, sales and deliveries.

**Copper Priority Amendment** — An amendment to General Preference Order M-9, which provided full priority control over copper, includes three main changes as follows

(1) Each refiner, in estimating the amount of copper he must set aside each month in a pool, for specific allocation, will set aside an amount equal to 20% of his April production of *duty-free* copper.

(2) The amendment provides that a refiner may make full shipment to any customer in any month in which that customer's total commitments do not exceed one minimum carload lot. It is also provided that no customer's order need be cut below a minimum carload lot for one month.

(3) Restrictions governing toll agreements are liberalized. It is provided that persons who are parties to toll agreements for copper, must file information concerning such agreements but need not file full copies of such agreements and need not obtain specific permission for new agreements.

**General Metals Order Changes**—Two changes affecting General Metals Order No.1, which is designed to prevent accumulation of unnecessary inventories, were announced recently. These changes are:

(1) The General Metals Order, scheduled to expire July 15, is extended to October 15, 1941.

(2) Customers of suppliers hereafter will not be required to file copies of their compliance affidavits with the Director of Priorities, as required under the original order.

In the amendment, it is stipulated that the customer must continue to file monthly statements with his suppliers but will not be required to file copies with the Director.

**Conserving Primary Nickel**—An order designed to conserve nickel by reducing the amount of primary nickel used in production of nickel-bearing stainless steel says that in the production of nickel-bearing stainless steel products, the amount of primary nickel to be used may not exceed 40 percent of the total nickel content in such steel.

The rest of the nickel content must be made up of nickel-bearing scrap.

Net effect of the order is to require that, for every one hundred pounds of nickel going into the production of stainless steel, only 40 pounds can be primary metal and the other 60 must come from scrap.

**Iron and Steel Scrap Changes**—Two further interpretations and instructions relating to General Metals Order No. 1, which provides inventory control over fifteen metals and classes of metals involve a change relating to iron and steel scrap and states that persons who handle such scrap shall be deemed to be suppliers only when they sell the material directly to a consumer of scrap. This means that the sale of iron and steel scrap is exempt from the order until it reaches that stage where a person who has the material sells it to the consumer.

**Secondary Aluminum Priority** — A new priority order granting a preference rating to a number of secondary aluminum smelters, whereby permitting them to buy aluminum scrap for processing, was issued recently.

The rating given the secondary smelters is A-10. This rating is being assigned only to those smelters who are doing substantial quantities of defense work and who have adequate facilities to handle the scrap metal quickly and efficiently.

Questions about the order or application for A-10 ratings from other smelters should be directed to the Aluminum and Magnesium Section, Office of Production Management.

**Cutting Crude Rubber Consumption**—A General Preference Order requiring a cut in the consumption of crude rubber from the current rate of about 817,000 tons a year to a rate of about 600,000 tons a year during the last half of 1941 was announced last month.

The cuts will be made gradually, beginning in July and increasing each month thereafter until December.

In the first month, July, each processor must cut his crude rubber consumption to 99 percent of his monthly average during the twelve months ending March 31, 1941. Using the same twelve months as a base, the processors wil have to cut in subsequent months to:

94 percent in August,
89 percent in September,
84 percent in October,
82 percent in November,
80 percent in December,

The remaining rubber—there is no shortage at present—will be used to accumulate stockpiles.

The order provides that defense orders must be filled first. Defense orders are Army, Navy, British, or Lend-Lease orders; orders going to the Maritime Commission, the Panama Canal, the Coast and Geodetic Survey, the Coast Guard, the Civil Aeronautics Authority; or the National Advisory Commission for Aeronautics; or any other order which bears a preference rating of A-10 or higher.

In order to have overall supervision over the distribution of rubber for defense, the Director of Priorities will allocate all rubber released by the Rubber Reserve Company (RFC), and in allocating among competing civilian demands he will be governed by the Civilian Allocation Program of the OPACS.

**Rubber Priority Amendment**—In order to aid the rubber industry to comply with required cuts in crude rubber consumption smoothly and with as few dislocations as possible, an amendment to the rubber priority order has been made which provides that no processor shall be required to reduce his consumption during July by more than 20 percent of the consumption figure for June.

**Merchant Shipbuilders Given Priorities**—To speed the construction of merchant ships vitally needed in the defense of this country and Great Britain, the Priorities Division of the Office of Production Management has announced that blanket preference ratings, are being granted to the nation's shipbuilders working on Maritime Commission hulls.

For ships to be completed this year, the rating will be A-1-a. The high ratings will assure the builders prompt delivery of critical materials, including steel plates.

Under the arrangement set forth, the shipbuilders who use the plan will apply it to their contractors by executing a copy of the order and serving it on their suppliers. The suppliers in turn may extend the rating to their own subcontractors by going through the same procedure.

Once a shipbuilder has served such an order on his suppliers, the rating will apply for all future orders flowing into the same ships.

(*Continued on page* 44)

# Bomber Plant Construction Started at Fort Worth

## *World's Largest Blackout Plant has Area Exceeding 1,280,000 square feet in One Building*

FOOTINGS are being poured near Fort Worth for the largest blackout plant in the world—Consolidated Aircraft Corporation's bomber assembly plant on the south shore of Lake Worth.

Imagine a single building 4000 feet long, the equivalent of 14 ordinary city blocks! That is the size of the main building from which giant, four motored bombers will be rolling by next summer. Width of the main building will be 320 feet, but both length and width of the building may be increased in an effort to step up the projected production rate.

The plant will be completely windowless. The only glass used will be in the entrance doors of the administration building nearby and in windows of a guardhouse, but these will be blacked out at night.

Ventilation of such a building is, of course, a problem, one which engineers still are struggling with, as they are, too, with the operation of great, sliding steel doors, 200 feet wide, which are to be placed each 600 feet of the length of the plant.

Footings for the big plant are being poured at the rate of 30 a day. Six hundred footings in all will be required. The cement content of the footings is estimated at approximately 100,000 cubic yards.

Walls will be of brick to a height of 12 feet, then will be of steel.

The government has revised its estimate of the cost of the big plant, adding $7,000,000, to the total, and setting the cost of the completed plant at $22,400,000.

A five-mile spur track is being laid by Texas & Pacific Railway Company from its main line north to the site of the factory. Contract called for construction in 45 days but at the present rate 30 days will be enough.

One of the two aisles of the main building will be for storage of materials, with tracks for freight cars to move in and out. Down the other broad aisle will move the line of bombers, each growing in shape and size as it advances from station to station on the line. From the assembly line the planes will move into a paint building. Then they will be shunted into a hangar for testing.

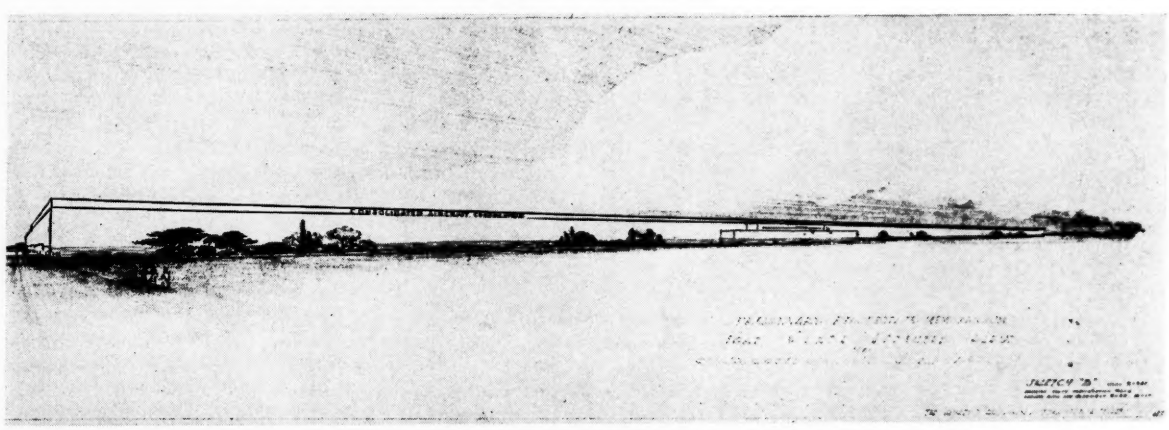
The airport, necessarily a large one for the accommodation of the big planes, is in the construction stage. Two runways, one north and south and the other northwest and southeast, are to be of concrete, 7,000 feet long and 150 feet wide. A taxiway 3,500 feet long will connect the runways.

Manufacture of 26,000 tons of structural steel for the plant is in the hands of Bethlehem Steel Corporation of Bethlehem, Pa. First shipment is scheduled shortly after August 1 but the huge $2,800,000 order will take months to fill.

When the structural steel begins arriving, the construction force, now 600 men, will be increased to 2,000 and placed on shifts.

Feeding of the crews at first appeared a problem. But a large cafeteria has been built by three Fort Worth men who received a concession from Austin Company officials, contractors for construction of the plant. In addition to the cafeteria, tractor-drawn kitchens move from place to place over the 1450-acre site, carrying food, even short orders, to men too far from the main building to walk in at mealtime.

Laying of water mains and sewer lines from Fort Worth's facilities is under way with city and WPA sharing the $530,000 cost.



***This architect's preliminary sketch of Consolidated Aircraft Corporation's Fort Worth plant shows how this world's largest blackout building will blend into the scenery.***

# Plant Expansions in the Southern Coastal Area

MORE than thirty manufacturing concerns in the Southern coastal area made additions to their plants in 1940. A number of these still are in the process of expansion, and several new plants are being established, according to the Atlantic Coast Line Railroad Co., which recently ordered 2,900 new freight cars to meet increased traffic demands from these and other firms along its line.

Defense contracts, according to the Coast Line report, are responsible for some of the heaviest investments in new equipment by plants served by the road. However, relatively large expenditures are shown to have been made in North Carolina, Georgia and Florida by businesses and firms not directly affected by the defense program.

Although figures for all of the firms listed in the report are not yet available, figures for enough have been furnished to substantiate the trend towards an increasing and greater diversification of industry in the Coastal area, including Florida.

*New and expanded plants in Atlantic Coast Line territory indicate increasing industrialism*

Charleston would appear to be the city most benefited in the Coast Line's survey. Here, the Pittsburgh Metallurgical Company, with headquarters at Niagara Falls, is in the process of establishing a one million dollar plant to manufacture ferro-alloys, according to Charles F. Colbert, Jr., president of the concern. About 200 people will be employed by the company, and it is believed that these will represent a fairly high class of workers, as seems to be the case in most metal industries, and that they will be paid a rather good wage.

The raw products to be used by the firm are listed as chrome ore, manganese ore, silica rock, steel turning, and coal. The ferro-alloys to be produced include ferro-silicon, silicon manganese and ferro-chrome.

The nearby Charleston Shipbuilding & Drydock Company is in the process of expansion. Recently reorganized, this firm has been awarded a contract by the U. S. Navy Department in the amount of $8,100,000.00 for construction of steel fleet tugs, and is investing about $750,000 in improvements which will provide a new marine railway, additional slips and building ways.

According to the Coast Line report, the company will require 1,800 employees when the ship building gets under way and will meet an annual payroll of approximately $4,000,000.00.

The General Asbestos & Rubber Company is another Charleston firm that is being enlarged. A division of Raybestos-Manhattan, Inc., this company has long been manufacturing asbestos products of various kinds and now, due to increased demand for their products, is expanding its plant to the extent of about $750,000.00 and putting on 750 more employees, which will raise the weekly payroll some $10,000.00 over normal operations.

Between sixty and seventy per cent of the firm's production, it is estimated, will be used for National Defense purposes.

In Georgia, the Brunswick Pulp & Paper Company gives evidence of expansion in the pulp and white paper field. Representing a capital investment of $5,000,000.00, this firm, since last July (1940) has increased its rate capacity from 150 tons per day to approximately 230 tons per day, its present rated capacity being 200 tons per day.

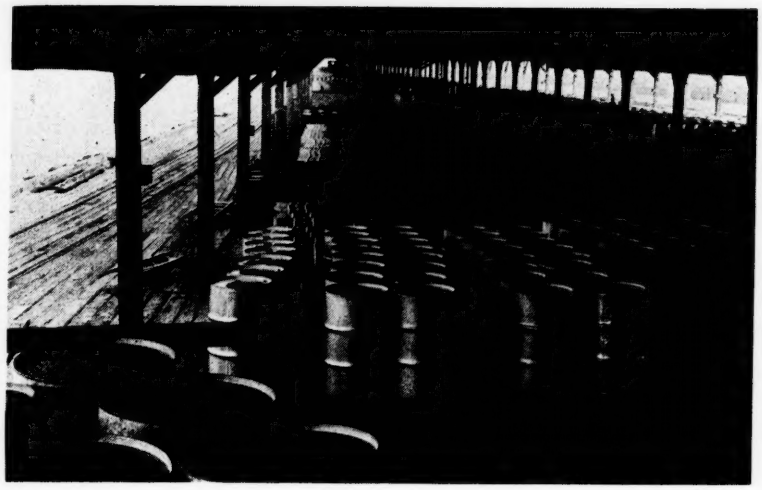
Four hundred and thirty persons are employed by the company. Its payroll amounts to about $11,500.00 weekly.

Another Georgia firm as undergoing expansion is represented by the Waycross plant of Rubin Brothers Footwear, Inc., which operates a factory at Zanesville, Ohio, for Northern markets. The Southern market, however, has proved so profitable that the firm is doubling the capacity of its Waycross plant, established only five years ago, and adding between 400 and 500 employees to its payroll. The capital investment of the addition, between $250,000 and $300,000, will provide for a new building of several floors with 100,000 square feet of floor space. Close to 1,000 persons will be employed by the firm when production in the new building gets under way.

Several new plants are now being served by the Coast Line in Virginia. Unquestionably, the largest of these is the Johns-Manville Corporation plant at Jarratt, built at a cost of $2,000,000 and possessing 3,500 feet of railroad siding. Operations are carried on in a building 250 feet wide by 1,200 feet long. Between 400 and 500 persons are employed during the year, and their annual payroll is calculated at $350,000.00. The yearly output of the plant is given as approximately 100,000,000 square feet of fibre products.

Suffolk, also in Virginia, claims two new plants. The Ramsey Package Corporation, which manufactures vegetable packages, hampers and baskets, was recently established here under a capital

***Above—Increased power is expected to attract more pulp and paper mills like this one of Union Bag and Paper Company at Savannah. Already a newsprint mill is under consideration.***



investment of $250,000.00 and employs between 275 and 300 people, whose payroll amounts to $200,000 annually. The value of the plant's output is placed at about $600,000 annually.

The other recent Suffolk plant, a modern abattoir, was formed under the name of Joel E. Harrell & Son. It occupies 90,000 square feet of floor space in modern brick and concrete buildings representing a $50,000 investment. About fifty persons are employed. Their salaries amount to $60,000 each year, while the output of the house is calculated at about $400,000 a year.

Also in Suffolk is the Birdsong Storage Company, which operates a factory for cleaning and shelling peanuts. After recent expansion, this firm now has warehouse and plant area of 500,000 square feet in which $150,000 have been invested. Two hundred and twenty-five people are employed by the company. The yearly payroll is given as about $200,000 and the value of the annual output as $4,000,000.

A considerable number of industrial expansions have taken place in North Carolina recently. I. M. Richardson, secretary, the Fayetteville Chamber of Commerce, reports that all of the manufacturing concerns in this area have increased their capacity and in some instances have installed new machinery, and that one textile mill which was out of operation for a few years has been purchased by outside capital, remodeled, and is now employing about four hundred persons.

At Plymouth, North Carolina, the North Carolina Pulp Company has increased pulp production from 350 to 500 tons daily, and paper production from 100 to 200 tons daily.

The Carolina Packers, Inc., at Smithfield, have about completed construction of a new meat packing plant and expect to begin operations at the end of June. $600,000 have been invested in the enterprise, which will employ about 30 persons with a weekly payroll of $750.00. The expected value of the output is $30,000 per month.

Two North Carolina veneer plants that have been closed are reported by Coast Line as reopening. These are the Calypso Veneer Company, at Calypso, which will manufacture box shooks, employing 100 to 150 persons; and the Rochlin Veneer Company, at Maysville, which will turn out veneer and built-up wood, and employ about 75 people.

The Sidney Blumenthal Company of Rocky Mount has built, in addition to its weaving plant, which employs 400 persons, a dyeing and finishing plant costing $500,000 and employing 500 additional persons with a $500,000 increased payroll.

In Wilmington, N. C., a 3,000 case-per-day bottling plant has been completed for the J. W. Jackson Beverage Company at a cost of $150,000.00. The plant will bottle Pepsi-Cola for distribution in the Wilmington area, and the company expects to handle, annually, between 300 and 400 carloads of beer.

Florida, too, continues to expand industrially. Four citrus fruit packing companies reported additions to their plants during 1940. The People's Packing Company built its first unit in the summer of 1939, and added last year a canning unit which turns out approximately 1,000 cases of juice per day. In the plants and groves, which cover about 1,000 acres, the firm employs approximately 100 people. Its annual output is placed by C. W. Palmore, manager of the concern, at close to 325,000 boxes, valued at approximately $485,000.

The enterprises of the Florida Citrus Canners Corp., comprise not only a citrus fruit canning plant but also a citrus fruit pulp feed mill. This item on the pulp feed mill is significant of a new progress factor in Florida. During the 1939-40 season approximately 9,000,000 field boxes of grapefruit and 4,000,000 boxes of oranges were used in Florida for canning purposes, according to Bulletin No. 354 issued by the Florida Agricultural Experiment Station, Gainesville, which states that the present utilization of citrus pulp as a cattle feed resulted in the production of 18,623 tons of dried citrus pulp during that season.

By drying this material, the citrus canning industry has changed a liability into an asset, reducing the cost of disposal and converting this residue into a non-perishable, salable feed.

The United States Sugar Corporation's great plant at Clewiston, in the heart of the Everglades district, is also going into the cattle feed business. Capable of turning out 6,000 tons of cane per day, the company has recently added a feed manufacturing unit to its holdings and is conducting experiments with the purpose of developing from sugar

*(Continued on page 54)*

***Above—Naval stores comprises one of the South's most important industries. Here is a section of the U. S. Government's supply of rosin at the naval stores yard of the ACL Railroad in Savannah. Below—The Pinopolis power house of the Santee-Cooper project in South Carolina.***

# Pipelines

## Gasoline Line From Louisiana To North Carolina

Ford, Bacon & Davis, Inc. has the contract to build a 12- and 8-inch gasoline line from Baton Rouge, La., across Mississippi, Alabama, Georgia, South and North Carolina to Greensboro in the latter State. Branches from the $15,000,000 project, which is for the Plantation Pipe Line Co., will extend to Chattanooga and Knoxville in Tennessee. Possibility of a connection with the country's No. 1 naval base at Norfolk, Va., is reported.

W. J. McKeon, of the engineering firm, has announced that Greenville, S. C., will be headquarters for Carolina operations on the 1,400-mile project. While the cost is put at $15,000,000, the complementary equipment and necessary terminals are said to increase the figure to more than five times that amount. Preliminary work on the surveys is now getting under way.

Plantation Pipe Line Co. is an operating organization owned jointly by Standard Oil Company of New Jersey, Standard Oil Company of Kentucky and Shell Union Oil Co.

## Transporting Petroleum

According to the American Petroleum Institute, attention of the petroleum industry is now focused on transportation of adequate supplies of petroleum and its products, in face of diversion of American tank ships to British service. These ships, the Institute points out through W. R. Boyd, Jr., its executive vice president, formerly carried a large part of crude and refined products from Gulf plants to the Atlantic coast.

Normally, the petroleum industry utilizes every available medium of transportation, as well as agencies of its own, such as pipe lines and tank ships. Some 670,000,000 barrels of crude oil are moved in intrastate traffic to refineries and 270,000,000 barrels are moved in interstate transportation by pipe line during the course of a year. Quantities carried by railroad tank cars and motor tank trucks approximate 26,000,000 barrels intrastate and 13,000,000 barrels interstate. Tank ship transfers amount to 72,000,000 barrels intrastate and 200,000,000 barrels interstate.

The United States, Great Britain, Norway and the Netherlands operated the bulk of the world's tanker service, according to figures released prior to present worldwide hostilities. The United States total of 421 ships with a gross tonnage of 2,800,700 has subsequently been added to by modern new ships, while the 435 British tankers with a gross tonnage of 2,919,566 have been depleted by numerous sinkings by German submarines.

There were also 32 Canadian registered tankers and 32 owned by other divisions of the British empire. Norway's tank ship fleet in 1939 numbered 272 with a gross tonnage of 2,117,381. The Netherlands operated 107 ships, gross tonnage 537,564.

Capacity of the 2,064 vessels available at the beginning of 1941 for transporting petroleum products was 42,467,193 barrels. Among these vessels were steam and motor tank ships and 1,400 sea-going and inland waterway barges.

Crude oil and products moved from the Gulf coast to Atlantic coast ports during 1940 are estimated at 428,000,000 barrels, while 6,749,000 barrels arrived on the Atlantic coast from California. The industry has built and now operates approximately 117,000 miles of pipe lines transporting crude oil, 190,270 miles of pipe lines for natural gas and about 10,000 miles for gasoline and other refined products.

## Expanding Oklahoma Pipelines

Twelve loops to be constructed by Gulf Refining Co. will increase by 10,000 barrels daily the carrying capacity of the pipeline between Glenn Pool, in Oklahoma, and Dublin Station, in Indiana near the Ohio line. The company will lay approximately 203 miles of the loops, which will supplement the 297 miles the company built back in 1936 to raise the then 32,000-barrel capacity to 43,000 barrels.

Construction contracts have been let to Williams Brothers Corp., of Tulsa; B. & M. Construction Corp. and Jones & Brooks, both of Oklahoma City. The Williams contract covers 43.95 miles in Oklahoma and Missouri; the B. & M. award, 71.10 miles in Missouri, with the 88.15 mile balance going to Jones and Brooks.

Inquiries for more than twice the amount of 10-inch necessary for the line were reported made by Gulf interests. Allocations for the pipe for the loops, however, are understood to be given to National Tube Co., Jones and Laughlin Steel Corp., and the Spang-Chalfant division of National Supply Co.

Gulf began moving crude to its Philadelphia refinery from Glenn Pool early in 1941. Before that time the oil was sent by pipeline to Pittsburgh where the Gulf refinery has a capacity of 10,000 barrels. Gulf plants at Toledo and Cincinnati each have 18,000-barrel outputs.

## Pipeline Problems

New lines, often built from pipe reclaimed from old ones, are being added continually to improve transportation economy, says the Petroleum Institute. Short cuts and new loops often increase the flow to coastal ports, where tankers take over. Welding has replaced other methods of construction and pressures have been increased, operating costs thus being reduced particularly for lines which transport hot and cold oil alternately.

Oil of the consistency of molasses to that of a consistency of gasoline is carried. The heavier fluids, such as the molasses-like type, are heated to 180 degrees Fahrenheit, each pumping station having its heaters which use exhaust steam from pumping engines to heat the oil as it moves along.

Not only changes in gravity, but differences of types of oil complicate pipe line shipments. A great variety of crude oils, which are kept separately in the field, are transported separately and usually are refined separately. When one type of oil follows another through the lines, mixing takes place. This mixture is cut out and stored separately to preserve the identity of the oils on either end.

Protection of the surface is a constant battle against the inroads of corrosion. Underground corrosion is electrolytic; that is, small currents generated along the line will take minute particles of iron with them as they pass into the soil. While anti-corrosive asphalt base coatings are widely used, a comparatively recent development known as cathodic protection diverts the electrical currents so that they enter the pipe instead of oscillating at will.

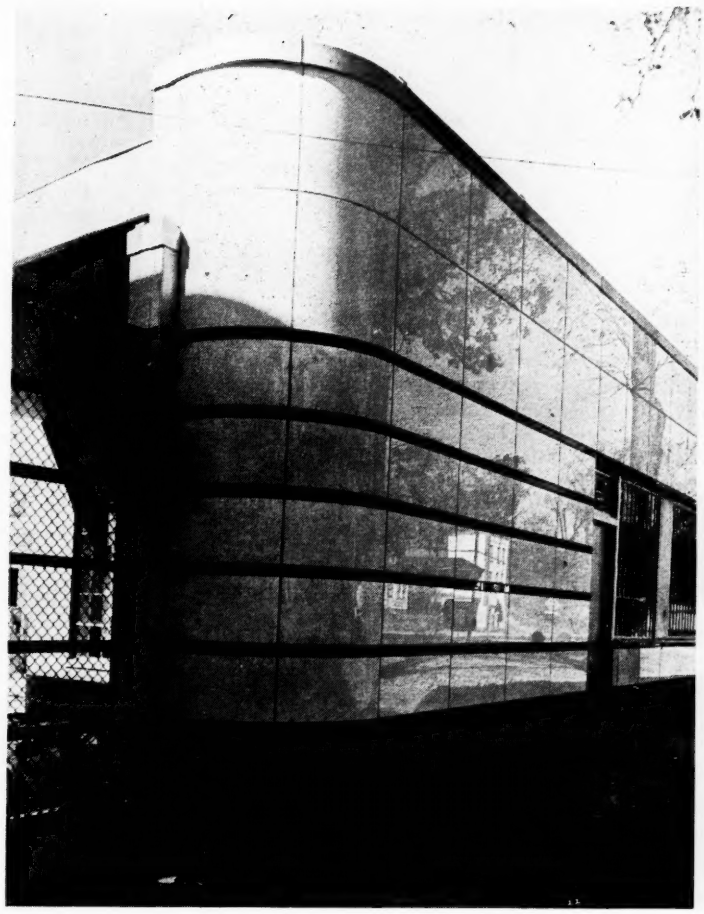
A never-ending problem, point out Institute officials, is that of right-of-way. The men working on this job arrange for the laying of trunk and gather lines across thousands of separate properties.

## Fairbanks-Morse Announces Special Bonuses To Employees

All employees of Fairbanks-Morse, except officers, who have been with the Company six months or longer, will receive special bonuses amounting to 10% of monthly wages or salaries, according to an announcement by Colonel R. H. Morse, President.

"These special bonuses will be in addition to those which may be earned under our regular profit sharing plan," said Colonel Morse, adding, "while it is extremely difficult to look very far ahead, it is our hope and belief that business will warrant payment of these bonuses for remaining months of the year."

# Glass Used for Masonry



*This glass fronted building, having a non-porous surface will not stain and will remain gleamingly new through the years.*

DESIGNED for permanency and lasting exterior beauty, the new Coca-Cola bottling plant in Asheville, N. C., marks the first large structure in this country featuring glastone, one of the building world's newest materials. Glastone is a glass-faced, load-bearing masonry unit in color.

Architect Henry Irven Gaines of Asheville, in planning the building not only for streamlined production but also for distinguished exterior appearance, selected a color scheme of ivory glastone for the facade, with strips of red glastone for trim.

With translucent glass for frontal window areas on the first floor of the two-story office portion of the building, and with two one-story wings faced in opaque red-trimmed ivory facades, the entire front presents 290 feet of sparkling, colorful glass.

It is said that this sweeping expanse of glass, in dignified coloring, will remain gleamingly new through the years. Architect Gaines points out that the glass, having a non-porous surface, will not stain and can be kept shining merely by use of damp cloths or sponges. An occasional shower or driving rain will suffice to keep such a building clean under ordinary circumstances.

One of the most modern of all Coca-Cola plants in design, construction, and mechanical equipment, the new structure, built for R. Lee Ellis, has a main building 116' by 160', flanked on either side by a wing housing a machine and paint shop, and another wing utilized as a garage. Each wing is separated from the two-story office and production unit by twenty-foot driveways. The office and production floors have a depth of 229 feet.

## *Asheville Plant First in Country to use New Product*

"Glastone consists of a structural flat glass (Vitrolite) facing bonded to a solid, lightweight concrete backing by 100 per cent full coverage of asphaltic adhesive and mechanically anchored to the concrete by a continuous metal binder around the entire perimeter of each glass face," according to Architect Gaines.

The vitrolite facing is free from pressure or load from any direction, and the 100 per cent full coverage of bonding adhesive to the concrete backing greatly increases resistance to breakage. Ample provision has been made by the manufacturer for expansion and contraction.

"The glastone blocks, put in place by masons in the same manner as cut stone or similar building blocks, are built into, and become an integral part of the building wall," says Mr. Gaines. "The masons did not need any special tools."

In corroboration, L. G. Merchant, vice president in charge of operations of the Merchant Construction Company, Asheville, who had the contract for the job, declares that glastone is one of the most interesting products that has come to his attention in a long time.

"Obviously this colorful masonry unit has significant possibilities," says Mr. Merchant. "We had some misgivings that a glass masonry unit might require unusually careful handling, but as I recall there was no instance of breakage during shipment. Damage on the job was remarkably low and, in fact, comparable to cut stone or similar materials."

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## Freight Car Orders Largest Since 1924

Class I railroads on June 1, 1941, had 65,047 new freight cars on order, the largest number on order at any one time since 1924 and compared with 15,039 on the same date last year.

New locomotives on order numbered 517, of which 231 were steam and 286 electric and Diesel.

# Loans For Defense Contracts

The Defense Contract Service states that 67% of defense loans by 321 banks in 101 cities went to companies with assets of less than $1,000,000 each and 26% to companies with assets of less than $100,000.

As of April 30, 1941, defense loans and commitments by the 321 banks totaled $1,093,000,000.

These loans and commitments were classified as follows according to total assets of the borrowers:

| | No. | Amounts |
|---|---|---|
| Less than $100,000 | 1599 (26%) | $ 33,000,000 ( 3%) |
| $100,000 to $1,000,000 | 2397 (41%) | 251,000,000 (23%) |
| $1,000,000 and over | 1793 (30%) | 801,000,000 (73.3%) |
| Not available | 91 ( 2%) | 8,000,000 ( 7%) |
| | 5880 | $1,093,000,000 |

Actual defense loans outstanding equalled about 8% of the total commercial loans of the same banks.

Of the defense loans outstanding, 56.5% were for less than $50,000 each.

The size of individual loans and commitments, the number and total amount of loans in each size bracket, and the number and total amount of commitments in each size bracket, were as follows:

| | Defense Loans | | Defense Commitments | |
|---|---|---|---|---|
| Size in Dollars | No. | Total Amts. | No. | Total Amts. |
| Under 1,000 | 101 | 58,000 | 21 | 14,000 |
| 1,000 to 9,000 | 815 | 3,492,000 | 221 | 1,025,000 |
| 10,000 to 49,000 | 1139 | 25,774,000 | 544 | 13,309,000 |
| 50,000 to 99,000 | 473 | 30,149,000 | 338 | 22,001,000 |
| 100,000 to 499,000 | 858 | 170,792,000 | 747 | 159,514,000 |
| 500,000 to 999,000 | 167 | 104,673,000 | 211 | 132,133,000 |
| 1,000,000 or over | 74 | 125,172,000 | 171 | 305,224,000 |
| | 3627 | 460,110,000 | 2253 | 633,220,000 |

The amount of major defense contracts held in the different Federal Reserve Districts, and the outstanding defense loans by the 321 banks in these districts on that date were reported as follows:

| FEDERAL RESERVE DISTRICT | MAJOR DEFENSE CONTRACTS BY WAR AND NAVY 6/1/40 to 4/30/41 | NUMBER OF LOANS | 4/30/41 321 BANKS IN 101 CITIES HAD LOANS OF DEFENSE |
|---|---|---|---|
| Boston | $1,375,513,000 | 347 | $54,590,000 |
| New York | 1,932,878,000 | 712 | 155,836,000 |
| Philadelphia | 1,076,743,000 | 187 | 23,707,000 |
| Cleveland | 571,176,000 | 310 | 37,637,000 |
| Richmond | 1,075,912,000 | 320 | 19,346,000 |
| Atlanta | 494,519,000 | 157 | 12,275,000 |
| Chicago | 1,361,702,000 | 439 | 82,220,000 |
| St. Louis | 518,099,000 | 175 | 14,760,000 |
| Minneapolis | 47,904,000 | 56 | 5,421,000 |
| Kansas City | 341,292,000 | 193 | 6,305,000 |
| Dallas | 223,483,000 | 222 | 13,943,000 |
| San Francisco | 1,813,343,000 | 509 | 34,070,000 |

The loan amounts listed are those actually oustanding on a single day and do not include other defense loans outstanding at other times.

All the defense loans considered in the survey were made to holders of defense contracts or subcontracts. The advances were made to provide working capital and, in some cases, to finance plant expansion.

## Southern Natural Gas Expansion

Natural gas from wells recently drilled in Western Louisiana and Northeastern Texas will materially augment the present supply of the Southern Natural Gas Company which serves one of the highly industrialized regions of the South.

Southern Natural Gas Company's $7,000,000 expansion program is designed to increase its gas delivery facilities by 45 million cubic feet daily and involves the building of approximately 260 miles of steel arteries in Louisiana, Mississippi, Alabama and Georgia, including two new 10-inch pipe lines under the waters of the Mississippi River.

Eight of its compressor stations will be extended to accomodate 18 new large gas engine operated compressors required to pump the increased flow of natural gas through the twelve hundred or more miles of pipe lines which extend from the Monroe Gas Field in Louisiana and across Mississippi to the South's big steel center at Birmingham and on to Georgia's commercial metropolis of Atlanta.

The program, according to C. P. Rather, Southern Natural Gas president, will include a new 14-inch pipe line extending 130 miles from six newly drilled wells in the Logansport field of Louisiana to connect with the existing system at Perryville, near Monroe. Other wells are to be drilled on the 12,000 acres of land leased, with erection of a dehydration plant scheduled to remove moisture from the new gas.

New pipe lines will be constructed to parallel those now in operation. These will total approximately 130 miles in length, 105 miles of which will be 22 inches in diameter and the balance of smaller sizes down to 12-inch size diameter.

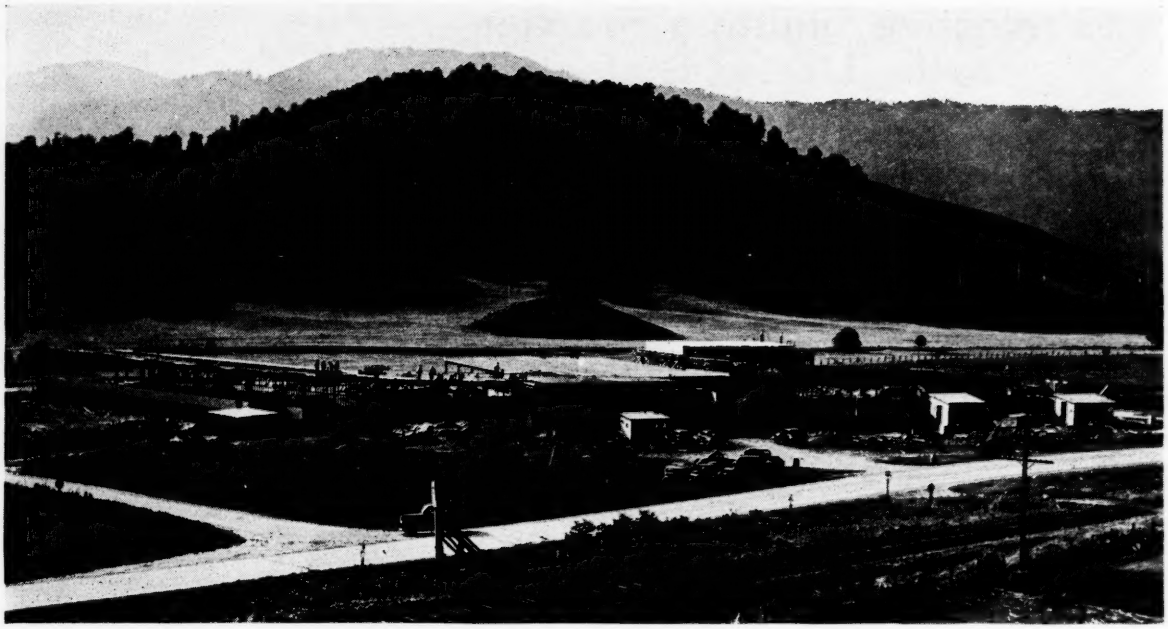
Construction of the new parallel lines and the compressor station additions to increase gas deliveries to the two important industrial and business centers, as well as to other southeastern points, is being carried out under supervision of Ford, Bacon & Davis, Inc., New York engineering and construction concern which has long specialized in such work.

## Magnesium Metal Production To Be Expanded

Recommendations for the expansion of facilities to produce magnesium metal to a capacity of 400,000,000 pounds annually was made recently by the Office of Production Management. Present production is at the rate of approximately 30,000,000 pounds a year and additions to plants already under way will raise that capacity to approximately 75,000,000 pounds annually.

Tremendously increased requirements for aircraft and other military uses, arising out of the expanded national defense and Lend-Lease programs, requires a productive capacity of approximately 400,000,000 pounds a year by the end of 1942.

It is expected that negotiations for the erection of new facilities will be carried on by the War Department, the Defense Plant Corporation, and seven or more companies producing or interested in the production of magnesium metal. The Dow Chemical Company which has plants at Freeport, Texas, and Midland, Michigan, and the Permanente Corporation, which is constructing a plant at Palo Alto, California, are at present the only producers of this metal.



***Away from congested urban areas and within the mountain defensible zone, the new plant of the Dayton Rubber Company nears completion at Waynesville, North Carolina, though construction has been delayed because of defense priorities. Original plans called for a factory costing $100,000 but before the foundations were completed these plans were revised materially in order to increase the plant's capacity.***

# South to Get Three New Aluminum Plants

Recommended locations of eight new aluminum plants to produce an additional 600,000,000 pounds annually have been announced by the Office of Production Management. This increase will raise United States capacity to 1,400,000,000 pounds annually. An additional 200,000,000 will be procured from Canada.

The recommendations have been forwarded by Director General William S. Knudsen and Associate Director General Sidney Hillman to the Secretary of War for approval, after which they will be transmitted to the Defense Plant Corporation, a subsidiary of the Reconstruction Finance Corporation, which will finance the new facilities.

With the power problem resolved, construction of all plants in the total aluminum expansion program can go forward immediately. Names of the companies that will operate the plants will be announced in the near future.

Areas selected and the size of plants recommended follow:

Arkansas: 100,000,000 pounds annual capacity for aluminum production.

Alabama: 100,000,000 pounds annual capacity for aluminum production.

North Carolina: 40,000,000 pounds annual capacity for aluminum production.

Bonneville—Grand Coulee area: two plants, one of 85,000,000 and the other of 55,000,000 pounds annual capacity for aluminum production.

Upper New York State: two plants, one of 100,000,000 and the other of 50,000,000 pounds annual capacity for aluminum production.

California: 70,000,000 pounds annual capacity for aluminum production.

Recommendations were based on the following conclusions, made after a comprehensive survey of the entire power supply of the nation:

1. That new aluminum plants should be located where they will be economically sound after the emergency.

2. That power supply at the locations recommended can be obtained as rapidly as the plants can be constructed.

3. That temporary measures can be taken to assure the necessary power by (a) improving transmission interconnections, (b) pooling and reducing power reserves, and (c) certain curtailment measures.

It is contemplated at the present time that all of the new plants involved in these recommendations will be government-owned but privately operated under a lease arrangement.

## Vultee Expands Michigan Plant To Aid Nashville Production

To permit fabrication and sub-assembly of units for Vultee military planes being made at the other divisions of the company at Nashville, Tennessee, and Vultee Field, California, expansion of the manufacturing and office facilities of the Stinson Aircraft Division of Vultee Aircraft, Inc. has been started at Wayne, Michigan.

A total of 80,000 square feet will be added to the present plant at Wayne. This will include new manufacturing area for the production of military plane parts and sub-assemblies, an extensive Service Department area, and a modern office structure.

The additional floor space will increase the company's total floor area at its three divisions to 1,875,000 square feet.

## 1334 Military Planes Delivered in May

Military aircraft manufacturers delivered 1,334 airplanes during May, according to the Office of Production Management. Comparable *final* figures for April showed 1,389 deliveries. Present indications are that airplane production for June will exceed the output for May and possibly that of April.



XUM

# Protective Lighting Practice in the United States

Proper lighting will aid in the policing of industrial plants and help guard against night sabotage, a prominent engineer told the American Institute of Electrical Engineers at the midsummer convention of the Institute.

H. E. Mahan, manager of General Electric's Illuminating Engineering Laboratory at Schenectady, cited a number of American cases where protective lighting systems already are working in conjunction with other measures to foil the saboteur.

The U. S. Government, through its Federal Bureau of Investigation, is encouraging such lighting in industrial plants which the Bureau surveys, Mahan said.

"Ways and means of accomplishing the desired lighting will vary," Mahan said. "I believe there is more than one satifactory solution to any one set of circumstances. Basic principles, however, should be followed. They include the provision of adequate illumination to detect trespassers, and absence of glare that handicaps guards, or is a source of annoyance to street and highway traffic, marine or railroad operations, or to occupants of neighboring buildings. Dependability of operation of the system is essential, as is a minimum of shadowed areas due to random lamp failures. All lighting equipment and electrical service facilities should be located within the property, or where it is not accessible to malicious damage. Provision for convenient maintenance and centralized control are also important.

"Special attention should be given to such situations as railroad sidings, alleys, roofs of abutting buildings, wooded or water approaches, entrances, and exits," Mahan continued. "These are all means of access that demand safeguarding. And also remember that protective lighting should be so distributed that guards patrolling the property will be concealed from the view of the saboteur."

Fence lighting, being a common feature of practically all protective lighting systems, has received the most serious study by lighting engineers, Mahan explained. In the larger plants, however, the lighting of areas between important buildings, including such miscellaneous spaces as courts, avenues, and alleys, should receive special lighting attention, he said. Large plants also should have some form of supplementary light, such as searchlights, under the control of guards, it was explained.

## Rayon Pilot Plant Established at Nitro, W. Va.

A new experimental unit for production of rayon staple fiber has just been put in operation at Nitro, West Virginia by American Viscose Corporation. It provides facilities for studying all phases of fiber production, from the preparation of the viscose solution to the packaging of the finished product, without interfering with normal production.

The new pilot plant, plans for which were originally formulated a year ago, differs from regular fiber plants mainly in its capacity. Operated at full capacity, it could produce about 2 million pounds of staple fiber per year though no such production is anticipated since the plant will be operated in short runs for test purposes. All mechanical equipment is of the latest type and incorporated into much of it are fundamental designs which are expected to lead toward future developments in the industry.

Housed in its own building, the pilot plant is completely separate and independent from regular plant activities. In its design, great stress was laid on its adaptability. Virtually every part of the process may be altered at will to test production under all conceivable conditions. Thus, it is possible to study the effect of varying one condition while all others are held constant.

## The First 155 mm. Gun Carriage Built By Private Industry For Defense Program

The first 155 mm. gun carriage built by private industry for our Defense Program was delivered to the government recently by the American Locomotive Company at its Dunkirk, New York, plant. Traveling on the road, the carriage proper is carried on an 8-wheel bogie. The trails are brought together and locked and fastened to a two-wheel limber, and this forms the connection to the prime mover. When in firing position, the carriage bottom is lowered to the ground and the trails are spread and anchored. The gun carriage itself weighs approximately 20,000 pounds. To build it required approximately 1600 drawings.

Gun carriages are now in line production at this plant and from now on deliveries will take place in steadily increasing numbers.

## N. & W. Awarded Harriman Safety Medal

The Norfolk and Western Railway, for the third time within 15 years, has been awarded the coveted Harriman Memorial Gold Medal for the outstanding safety record among Class I railroads of the United States during 1940.

The medal, awarded annually by the American Museum of Safety, was won by the N. & W. in competition with 35 other Class I railroads operating 10,000,000 or more locomotive miles per year. It was presented to W. J. Jenks, N. & W. President, by E. R. Harriman, a member of the board of directors of the Union Pacific Railroad, at a luncheon at the Yale Club, attended by prominent railroad and business executives. The award was made on behalf of E. R. and W. A. Harriman, sons of the late E. H. Harriman, whose wife, the late Mary W. Harriman, founded the medal in memory of her husband.

Pointing out that the Norfolk and Western had the lowest casualty rate of any of the Class I railroads, the citation of award revealed that the employee casualty rate on the N. & W. in 1940 was an improvement of 84 per cent over the average for the three years, 1923-1925. The citation added, "This represents a total saving since 1924 of 92 employees' lives and the prevention of some 12,000 employee injuries, for which all concerned should be justly proud."

The figures showed further that during the past three years, the Norfolk and Western has carried approximately 3,500,000 passengers nearly 275,000,000 miles without a single injury or fatality in a train accident.

The railway won the Harriman Gold Medal for the outstanding safety record in 1926 and 1938, and the Silver Medal for the safest division—the Scioto—in 1915.

## Available Railroad Tank Cars

*Editor,* MANUFACTURERS RECORD

Our information on the subject of tank cars is based principally on the report made to Secretary of the Interior Harold L. Ickes by the American Petroleum Institute's fact-finding committee. Their estimate was that there is a present surplus of about 20,000 tank cars, which, it was believed, could move between 6,000,000 and 8,000,000 barrels of petroleum a month from Texas to the Atlantic Seaboard. This would amount to from 200,000 to 266,000 barrels a day.

Railroads, as you know, have done a diminishing part of the oil transportation business for years past. The oil companies are completely integrated organizations, operating their own business all the way from a hole in the ground to the fuel pump which puts gasoline in your car. They perform almost all their own transportation service in tank ships, barges and pipe lines. Even that part of the oil which moves by rail moves for the most part in tank cars which belong to the oil companies or to private tank car companies, and not to the railroads. The railroads furnish the tracks, the motive power and the operating personnel to pull the cars and pay a mileage charge for the use of the cars. Railroad ownership of the tank cars is negligible.

The number of tank cars of all kinds owned by the railroads and by private car companies, including oil companies, in various years was as follows:

| | |
|---|---|
| 1921 | 116,871 |
| 1924 | 133,145 |
| 1928 | 147,470 |
| 1939 | 144,108 |
| 1940 | 143,140 |

The 1940 figure was obtained from responses to a questionnaire sent to all railroads and private car line companies.

Responses to the questionnaire indicated that in 1940 there were 19,544 surplus tank cars of all descriptions which could be used for petroleum and petroleum products. Of these, 44 were owned by the railroad companies and 19,510 were owned by private car lines. Most of the tank cars owned by the railroad companies are used for the transportation of fuel oil and gasoline for their own use.

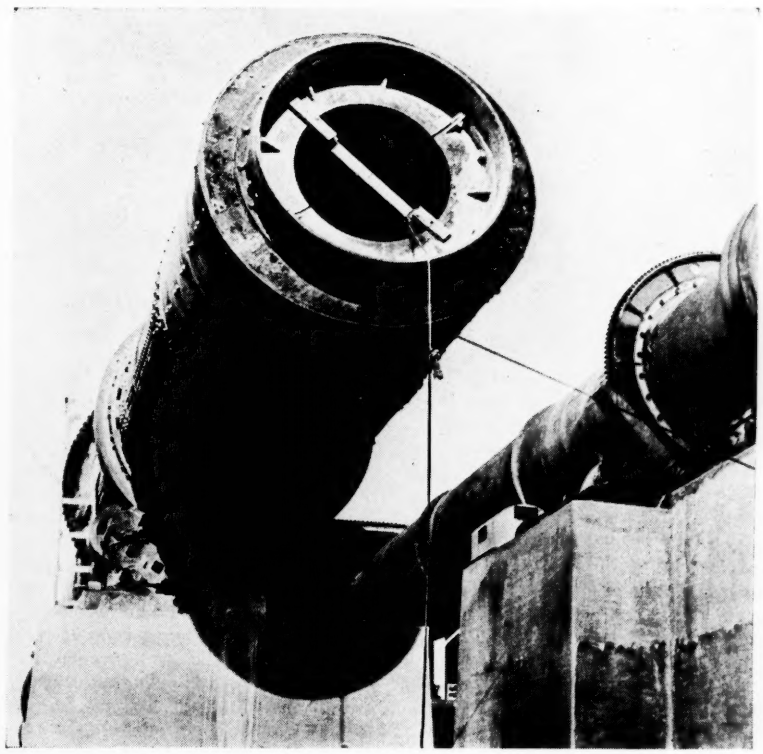
C. J. CORLISS
Association of American Railroads

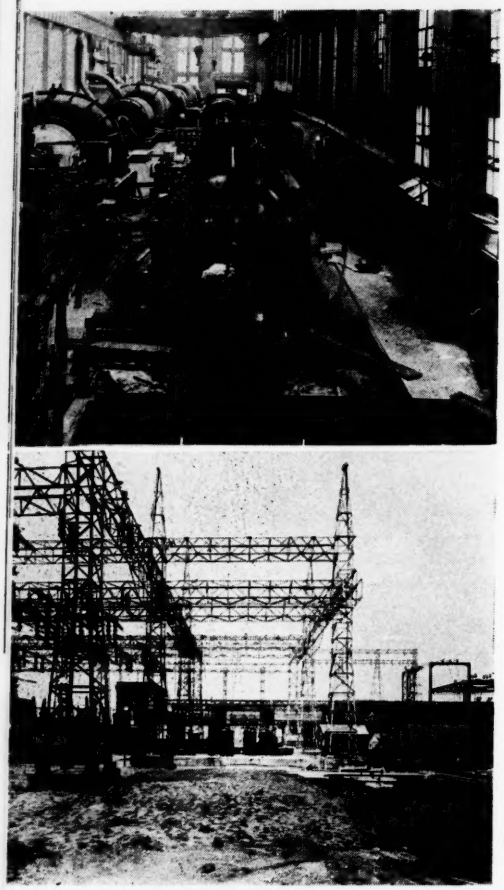
## SS Paul M. Gregg Launched At Sparrows Point Yard

An important addition was made to the fleet of American tankers when the *S. S. Paul M. Gregg* was launched June 14 at the Sparrows Point Yard of Bethlehem Steel Company, Shipbuilding Division. The new vessel, the keel of which was laid on December 23, 1940 is being built for Union Oil Company of California, and will be used in regular service on the Pacific Coast. Mrs. Charlotte D. Gregg, of Pasadena, California, was the sponsor. Her husband, for whom the vessel is named, was for many years Vice President and a Director of the Union Oil Company.

The *S. S. Paul M. Gregg* has a dead weight of about 13,000 tons and has a tank capacity of 103,445 barrels, or 4,344,690, gallons of oil. The cargo tank space is divided into 24 compartments allowing many grades of oil to be carried at one time. Pumping capacity is designed to load or unload the vessel in less than 12 hours.

***Like giant cannon against the sky, the huge kilns of the Listerhill, Ala., aluminum plant of Reynolds Metals Company, tell the story of America's building for defense. This aluminum plant was put into operation less than six months from the day construction started. More than 100,000,000 pounds per year of aluminum will be produced in Reynolds two plants at Listerhill and Longview, Wash.***





***Above—West Penn Power Co., subsidiary of American Water Works and Electric Co., is now carrying forward a $7,000,000 expansion at its Windsor station, near Wheeling, W. Va., the new 66,677-kilovolt-ampere, 90 per cent P. F. generator shown in the foreground of the top picture is expected to be ready for operation this fall. The new 132-kilovolt bus supporting structure under construction at the Windsor plant is shown in the lower illustration.***

## Substitute For Aluminum Paint

An illustration in the June MANUFACTURERS RECORD referred to the development of a new paint as a substitute for aluminum paint, now restricted as to use by defense priorities. Because of the number of inquiries concerning this substitute paint, it will be of interest to know that this product is at present obtainable from the Sherwin-Williams Company, Pittsburgh Plate Glass Company, and E. I. duPont deNemours. The Sherwin-Williams product is marketed as White Tank Paint CH-591, the Pittsburgh Plate Glass Company is manufacturing several synthetic type coating materials available in white, light gray and other colors, while the duPont product is known as Dulux White for tanks.

## Atlantic Coast Line Places Record Order

C. McD. Davis, Executive Vice-President, Atlantic Coast Line Railroad Company, states that orders have been placed by that railroad for 2,900 freight cars. Mr. Davis also announced that orders have been placed with Electro-Motive Corporation for 9 Diesel-electric passenger locomotives, and with Edward G. Budd Manufacturing Company for 16 light-weight, streamlined, stainless-steel passenger train cars.

The order for 2,900 freight train cars closely follows purchase of 1,693 new cars, delivery of which was completed early in 1941. The new freight train equipment has been made necessary by the materially increased volume of traffic the Atlantic Coast Line is now handling. Under the National Defense Program a number of camps and cantonments have been located in the company's territory, along with the establishment of shipyards and other defense activities, and the railroad is pursuing a program intended to insure that there will be no shortage of equipment under the requirements anticipated to be imposed by defense activity.

Orders for the new freight train cars have been placed with manufacturers as follows:

| | |
|---|---|
| American Car and Foundry Company | |
| All-steel, single door, 50-ton box cars | 800 cars |
| All-steel, 50-ton, auto-box cars | 700 cars |
| Pullman-Standard Car Manufacturing Company | |
| All-steel, single door, 50-ton box cars | 800 cars |
| Mount Vernon Car Manufacturing Company | |
| All-steel, 50-ton, furniture-automobile cars | 300 cars |
| Bethlehem Steel Company | |
| All-steel, 50-ton, high-side gondolas | 200 cars |
| All-steel, 70-ton, phosphate rock hopper or dump cars | 100 cars |
| Grand Total | 2,900 cars |

The orders for additional Diesel-electric passenger locomotives and lightweight, streamlined, stainless-steel passenger train cars represent the Atlantic Coast Line's part of a program which will place a total of 12 additional Diesel-electric locomotives and 32 additional lightweight passenger train cars in East-Florida passenger service for the next winter season, the Pennsylvania Railroad and Florida East Coast Ry., the other roads in the joint route, to provide the additional equipment.

## First All-Welded Passenger Ship Launched in South

An outstanding event of the South's shipbuilding industry took place on June 28 when the *S. S. African Comet* was launched by the Ingalls Shipbuilding Corporation at Pascagoula, Mississippi. Sponsor of the ship was Miss Mary M. Farrell, daughter of Mr. James A. Farrell, Jr., president of the American-South African Lines, by whom the ship will be operated. This ship, which is the first all-welded passenger vessel ever built, will be one of three ships inaugurating a 16½-day schedule between New York and Capetown. The other two, *African Meteor* and *African Planet*, will be launched from Pascagoula ways later this year. The *African Comet's* dimensions are:

| | |
|---|---|
| Length | 489 feet |
| Breadth | 69½ feet |
| Draught | 27¼ feet |
| Speed | 19 knots |
| Displacement | 17,000 tons |

The ship will accommodate, in addition to a full cargo, 112 passengers. The murals and other decorations are to be executed by Jan Juta, the South African artist who executed the decorations on the *Queen Mary* and *Queen Elizabeth*.

***Ground was broken a few weeks ago for the $3,900,000 addition to the Rivesville power station of Monongahela West Penn Public Service Co., of Fairmont, W. Va. In the view shown below the Lorain shovel takes a bite at the ceremony. Contract for the turbine, generator and condenser has been placed with Westinghouse Electric and Manufacturing Co., East Pittsburgh, Pa.; for the steam generator and coal pulverizers, with Foster Wheeler Corp., New York. The expansion follows a 25,000-kilowatt unit installed in 1936 at a cost of $3,300,000 and will increase capacity of the station 35,000 kilowatts, bringing the total output to over 100,000 kilowatts. The plant was originally finished in 1919.***

# *Again*

## FOR THE

# THIRD TIME

# *The Highest Award in Railroad Safety*

THE efforts of Norfolk and Western Railway employees have again won for their railroad—for the third time—the highest honor in the field of railroad safety — the coveted Harriman Memorial Gold Medal, awarded by the American Museum of Safety for achieving the outstanding safety record in 1940 in competition with 35 Class I railroads of the United States.

The Norfolk and Western and its employees are proud of this achievement, and their safety record through the years. It is a record which has meant the actual saving of 92 employees' lives and the prevention of 12,000 employee injuries since 1924; the transportation during the past three years of approximately 3,500,000 passengers nearly 275,000,000 miles without a single injury or fatality in a train accident; and the safe, on time transportation of hundreds of thousands of carloads of freight. This is progress in accident prevention — the result of years of practical planning, safety education, and the expenditure of millions for a modernized, safer railroad.

The Norfolk and Western and its workers pledge themselves to greater effort in maintaining and upholding their firm conviction that — safety is the first law of good railroading.

## NORFOLK *and* WESTERN *Railway*

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## Priorities

(*Continued from page* 32)

**Priorities For Freight Car Builders**—Because of a growing tightness in the supply of freight cars, a limited blanket rating is being extended to sixty car builders which will aid them in obtaining scarce materials and thereby speed up their production schedules.

The rating provided in the order is A-3. This puts the requirements for freight-car construction and repairs behind the top needs in the A-1 classes, but ahead of the less essential needs with lower ratings. In the order it is provided that the rating can be used to facilitate the obtaining of material and equipment entering into freight-car construction, including railroad, industrial and mine freight cars.

Car builders who use the rating, including railroads which build their own cars, can extend it to their suppliers by executing copies of the order and serving it on their subcontractors, who, in turn, can extend the rating to their own suppliers by going through the same procedure.

In a letter accompanying the order, car builders are urged to substitute non-scarce materials for critical items wherever possible. It is suggested that wood be substituted for critical metals wherever possible and that, in addition, the car builders specify standard sizes and thicknesses of steel sheets and plates so as to minimize production difficulties.

The rating extended to the car builders applies not only to orders for critical materials but also to orders for cutting and other perishable tools and equipment. The rating does not cover machine tools, however, and the rating for machine tools and similar production machinery must be obtained in the usual manner by application for preference rating certificates.

**New District Priorities Offices**—The setting up of a Priorities Division field organization which will have regional offices in various parts of the country was recently announced by E. R. Stettinius, Jr., Director of Priorities.

The field offices will be staffed by representatives of the Priorities Division who, following a training period in Washington, will be able to help and advise businessmen and manufacturers who have difficulty with priorities questions.

Two members of the Priorities Division's Executive Staff, L. Edward Scriven and E. C. Laird, Jr. both Assistant Deputy Directors, will be in charge of the regional field offices.

Four of the regional offices have already been opened at Boston, New York, Philadelphia, and Chicago. Others will be opened soon.

William P. Homans will be District Manager in Boston, at 30 Pearl Street, Boston.

Phillip M. McCullough is District Manager in New York at 33 Liberty Street, New York City.

Frederick W. Slack will be District Manager for the Philadelphia office at 925 Chestnut Street, Philadelphia.

Warren G. Bailey will head the District office in Chicago at 230 South LaSalle Street, Chicago, Illinois.

**General Preference Order on Tungsten**—To conserve the nation's supply of tungsten and divert part of the demand for high-speed tungsten tool steel into molybdenum-type steel, the Director of Priorities has issued a General Preference Order governing the distribution of high tungsten tool steel in industrial channels.

This is the first order issued in which substitution has specifically been required in order to conserve the supply of critical material.

It is stipulated in the order that a customer for high-speed steel may not purchase the tungsten-type steel if the molybdenum-type would serve as well.

It is also provided that, during any three-month period, a customer for high-speed steel may purchase the tunsten steel only to the extent that he buys an equal amount of the molybdenum steel which contains less tungsten.

If a customer wants 50 pounds of high-speed tool steel, for example, the order will require him, in effect, to order 25 pounds of the molybdenum-type steel in order to get 25 pounds of the steel with higher tungsten content.

Figures now available on tungsten indicate that the total supply available in this country during 1941 (not including stockpiles) will approximate 15,000 short tons of concentrates. During the latter half of the year, however, the consumption of tungsten may increase to a *rate* of approximately 20,000 tons of concentrates.

These figures indicate that the tungsten situation will probably become increasingly tight. The supply figure will, of course, be affected considerably if imports from China are cut off.

**Full Control for Zinc**—Zinc, a metal vitally essential in defense production, was put under full priority control in a General Preference Order issued last month.

The Order, which becomes effective July 1, provides that all defense needs shall be filled ahead of all other requirements, that an emergency pool will be created to meet urgent needs, and that the remaining zinc shall be allocated among competing civilian demands. In allocating for delivery under civilian orders, the Director of Priorities will be guided by a civilian allocation program when issued by the Office of Price Administration and Civilian Supply.

Heretofore zinc has been subject only to partial control through a production pool which for June was set at 22% of the amount produced in April and approximates 15,000 tons.

Available figures indicate that the total supply of zinc in 1941 will approximate from 890,000 to 950,000 short tons. The estimated requirements for 1941, however, including military and civilian needs are now estimated at 1,165,000 short tons. This indicates an overall shortage of from 215,000 to 275,000 tons for 1941.

**July Zinc Pool**—The amount of metallic zinc to be set aside in July, in an emergency pool, will equal 22% of May production. This will approximate 16,000 tons.

Producers of zinc oxide will be required to set aside 10% of May production, or approximately 1500 tons.

Producers of zinc dust will not be required to set aside any pool for July.

**Ferro-tungsten Priority** — Priority control over ferro-tungsten, tungsten metal powder and tungsten compounds, originally imposed on March 26 for expiration on June 30, is being extended to August 31.

One of the principal uses of tungsten is in the manufacture of high-speed cutting tool steels. Because large quantities of the metal are imported from the Far East, and because of the shipping uncertainties involved, efforts are being made to conserve tungsten and to encourage the use of substitutes in the production of tool steels.

**Synthetic Rubber Control**—The Priorities Division, O P M has issued two orders providing mandatory priority control over all synthetic rubber and also over certain types of polyvinyl chloride, a plasticized resin material used in the manufacture of sheathing for ship's cables.

The new synthetic rubber order, which takes effect July 1, includes Neoprene (previously under control) and also takes in the other synthetic rubbers such as buna types like Hycar, Perbunan, Chemigum, and Organic Polysulphides such as the material known by the trade name of Thiokol.

Specific allocations will be made month by month to regulate the distribution of the synthetic rubbers and make sure that all defense needs are filled ahead of non-defense requirements.

The same procedure of allocation will be followed in the case of Polyvinyl chloride.

**New Priorities Critical List**—A revised and expanded Priorities Critical List was issued last month including approximately forty new items and classes of items, thus expanding the total number of materials and classes of materials included to over 300.

The Critical List is a compilation of materials on orders for which Army and Navy contracting officers may automatically assign preference rating certificates, thus assuring prompt delivery for military purposes.

Items appearing on the list include all fabricated, mechanical or electrical component parts and accessories necessary for the completion, maintenance or mechanical operation of the items, excluding raw materials unless specifically included in the list.

New items appearing on the present list include types of: blankets, cable, cloth, furnaces, gloves, addressing and duplicating machines, photographic equipment, motion-picture equipment, parachute silk, X-Ray equipment, and several types of chemicals.

Copies of the list may be obtained from the Division of Priorities, Office of Production Management.

**Borax and Boric Acid**—Borax and boric acid are now under full priority control.

The order, which took effect June 9, provides that direct military requirements for borax and boric acid receive a preference rating of A-8, which gives such demands first call on the available supplies.

The order also provides that deliveries of borax or boric acid to be used in the manufacture of borosilicate glass

(*Continued on page* 60)

INDUSTRIAL DEPARTMENT ★ SEABOARD AIR LINE RAIL
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**Watts Building** **Birmingham, Ala.**

# National Defense Program Awards in the South

(*Continued from page 29*)

| | |
|---|---|
| Navy Contracts | 22,759,777[1] |
| W. P. A. Defense Projects (F. W. A.) | 900,762 |
| Office of Education Defense Training (F. S. A.) | 985,724 |
| National Youth Administration (F. S. A.) (Defense Training Funds for 1941) | 1,505,297 |
| Defense Plant Corporation (F. L. A.) | 16,259,044 |
| Reconstruction Finance Corporation (F. L. A.) | 216,055 |

**CONTRACTS AWARDED MAY 16 TO JUNE 15**

**Quartermaster Corps (Army)**

**Rice-Stix Dry Goods Co.**, Slater, 50,000 cotton drawers, $14,625.

**Goodenow Textiles Co.**, Kansas City, 375,000 cotton drawers, $92,813.

**Premium Cap Co.**, St. Louis, 60,000 O. D. winter caps, $125,937.

**Premium Cap Co.**, St. Louis, 200,000 twill caps, $28,985.

**Ely & Walker Dry Goods Co.**, Salem, 240,000 cotton drawers, $70,320.

**Oberman & Co.**, Springfield, 120,000 khaki cotton shirts, $59,700.

**Elder Mfg. Co.**, St. Louis, 200,000 O. D. flannel shirts, $103,948.

**Miller Mfg. Co., Inc.**, Joplin, 100,000 O. D. flannel shirts, $51,960.

**Brookfield-Garrison Mfg. Co.**, Warrensburg, 20,000 twill jackets, $14,963.

**Hipsh, Inc.**, Holden, 20,000 twill jackets, $12,375.

**Hussman-Ligonier Co.**, St. Louis, 5,114 meat and food chopper machines, $27,360.

**Kansas City Cap Mfg. Co.**, Kansas City, 30,000 khaki field hats, $16,800.

**Snower Mfg. Co.**, Kansas City, 192 cooks' and bakers' coats, $240.

**Ordnance (Army)**

**Lincoln Engineering Co.**, St. Louis, equipment for tanks, $5,623.

**H. Wenzel Duck Co.**, St. Louis, O. D. cotton duck, $9,449.

**Fred Medart Mfg. Co.**, St. Louis, clothing lockers, $7,501.

**Lincoln Engineering Co.**, St. Louis, hose adapters and lubricating guns, $14,152.

**McQuay-Norris Mfg. Co.**, St. Louis, parts for tanks, $4,226.

**Corps of Engineers (Army)**

**Wrought Iron Range Co.**, St. Louis, Army No. 5 coal ranges, Windsor Locks, Airfield, Conn., $3,439.

**Joseph Kesl Rental Equipment Co.**, St. Louis, rental of motor grader, Jefferson Barracks, $10,728.

**American Foundry & Mfg. Co.**, St. Louis, fire hydrants, Jefferson Barracks, $2,698.

**American Sash & Door Co.**, Kansas City, millwork, aircraft assembly plant, Tulsa, Okla., $2,220.

**Signal Corps (Army)**

**Gaffney-Kroese Electric Supply Co.**, St. Louis, cut-outs, $707.

**Medical Corps (Army)**

**Buck X-Ograph Co.**, St. Louis, cassettes and intensifying screens, $27,597.

**Air Corps (Army)**

**Curtiss-Wright Corp.**, Airplane Div., St. Louis Plant, Robertson, airplanes and spare parts, $31,904,381.

**Fred Medart Mfg. Co.**, St. Louis, steel shelving, $17,993.

**Curtiss Wright Corporation**, Airplane Div., St. Louis Plant, Robertson, airplanes, $351,477.

**Supplies & Accounts (Navy)**

**Diagraph Bradley Stencil Machine Corp.**, St. Louis, board stencil paper, $8,195.

**Columbian Steel Tank Co.**, Kansas City, cylindrical buoys, $192,617.

## NORTH CAROLINA

Value of Total Awards July 1, 1940 to June 16, 1941

| | |
|---|---|
| Army Contracts | $55,073,805 |
| Navy Contracts | 14,763,644[1] |
| U. S. Maritime Commission Emergency Ship Program | 64,549,375 |
| Farm Security Admin. (Agr.) (Defense Housing) | 70,000 |
| W. P. A. Defense Projects (F. W. A.) | 2,549,321 |
| U. S. H. A. Defense Housing Projects (F. W. A.) | 897,900 |
| Public Buildings Admin., Def. Housing (F. W. A.) | 1,543,000 |
| Office of Education Defense Training (F. S. A.) | 1,014,136 |
| National Youth Administration (F. S. A.) (Defense Training Funds for 1941) | 1,506,224 |
| Reconstruction Finance Corporation (F. L. A.) | 5,164 |

**CONTRACTS AWARDED MAY 16 TO JUNE 15**

**Quartermaster Corps (Army)**

**Manteo Boat Building Co.**, Manteo, rescue boats, $225,200.

**Batavia Mills, Inc.**, Mooresville, 96,000 bath towels, $26,364.

**Dixe Awning & Tent Co.**, Winston Salem, 2,000 small wall tents, $14,000.

**R. W. Eldridge Co., Inc.**, Charlotte, 500,000 cotton handkerchiefs, $22,795.

**Chemical Warfare (Army)**

**Threads, Inc.**, Gastonia, O. D. thread, $13,406.

**Supplies & Accounts (Navy)**

**Mount Airy Knitting Co.**, Mount Airy, cotton-wool mixed undershirts, $103,000.

## OKLAHOMA

Value of Total Awards July 1, 1940 to June 16, 1941

| | |
|---|---|
| Army Contracts | $184,201,187 |
| Navy Contracts | 1,879,219[1] |
| Civil Aeronautics Admin. (Commerce) (Airport Expansion Program) | 549,000 |
| W. P. A. Defense Projects (F. W. A.) | 3,024,696 |
| Public Buildings Admin., Def. Housing (F. W. A.) | 465,500 |
| Office of Education Defense Training (F. S. A.) | 703,674 |
| National Youth Administration (F. S. A.) (Defense Training Funds for 1941) | 1,125,445 |
| Reconstruction Finance Corporation (F. L. A.) | 165,000 |

**CONTRACTS AWARDED MAY 16 TO JUNE 15**

**Corps of Engineers (Army)**

**Midland Structural Steel Co.**, Cicero, Illinois, structural steel, aircraft assembly plant, Tulsa, $2,488,200.

**Cyclone Fence Division, American Steel & Wire Co.**, Fort Worth, Texas, fencing materials, aircraft assembly plant, Tulsa, $3,511.

**The Whitaker Co.**, Prescott, Ark., southern yellow pine, aircraft assembly plant, Tulsa, $8,122.

**Hope Lumber & Supply Co.**, Tulsa, southern yellow pine, aircraft assembly plant, Tulsa, $2,410.

**Frank Hudson Steel & Wire Co.**, Tulsa, fencing materials, aircraft assembly plant, Tulsa, $2,406.

**American Sash & Door Co.**, Kansas City, millwork, aircraft assembly plant, Tulsa, $2,220.

**Air Corps (Army)**

**Phillips Petroleum Co.**, Bartlesville, engine fuel, 305,466.

**Douglas Aircraft Co., Inc.**, Santa Monica, Calif., will operate the Tulsa Plant but will produce Consolidated type bombers, $158,850,000.

**Phillips Petroleum Co.**, Bartlesville, engine fuel, $4,042,860.

## SOUTH CAROLINA

Value of Total Awards July 1, 1940 to June 16, 1941

| | |
|---|---|
| Army Contracts | $23,477,957 |
| Navy Contracts | 123,486,275[1] |
| W. P. A. Defense Projects (F W. A.) | 2,820,511 |
| U. S. H. A. Defense Housing Projects (F. W. A.) | 3,301,238 |
| Public Buildings Admin., Def. Housing (F. W. A.) | 1,059,000 |
| Office of Education Defense Training (F. S. A.) | 684,058 |
| National Youth Administration (F. S. A.) (Defense Training Funds for 1941) | 844,318 |
| Reconstruction Finance Corporation (F. L. A.) | 87,664 |

**CONTRACTS AWARDED MAY 16 TO JUNE 15**

**Quartermaster Corps (Army)**

**Nantex Mfg. Co.**, Greenwood, 195,000 cotton drawers, $55,679.

**Riegel Textile Corp.**, Ware Shoals, 500,000 cotton handkerchiefs, $21,645.

**Southern Handkerchief Mfg. Co.**, Greenville, 500,000 cotton handkerchiefs, $22,288.

**Reeves Brothers, Inc.**, Greensville and Clevedale, 29,320 cotton cloth, $13,346.

## TENNESSEE

Value of Total Awards July 1, 1940 to June 16, 1941

| | |
|---|---|
| Army Contracts | $62,116,243 |
| Navy Contracts | 1,729,346[1] |
| Farm Security Admin. (Agr.) (Defense Housing) | 114,750 |
| W. P. A. Defense Projects (F. W. A.) | 433,530 |
| U. S. H. A. Defense Housing Projects (F. W. A.) | 774,800 |
| Office of Education Defense Training (F. S. A.) | 1,093,569 |
| National Youth Administration (F. S. A.) (Defense Training Funds for 1941) | 1,218,616 |
| Defense Plant Corporation (F. L. A.) | 32,223,829 |
| Reconstruction Finance Corporation (F. L. A.) | 15,086 |

**CONTRACTS AWARDED MAY 16 TO JUNE 15**

**Quartermaster Corps (Army)**

**Stein-Way Clothing Co.**, Erwin, 50,000 twill trousers, $32,500.

**O'Bryan Bros., Inc.**, Nashville, 150,000 O. D. flannel shirts, $77,250.

**Dixie Mfg. Co., Inc.**, Waverly, 100,000 O. D. flannel shirts, $52,000.

**Southern Mfg. Co.**, Nashville, 300,000 O. D. flannel shirts, $156,000.

**Gray & Dudley Co.**, Nashville, 10,128 cast iron griddles, $43,546.

**Southern Athletic Co., Inc.**, Knoxville, 210,000 barrack bags, $104,450.

**The Rivoli Mills**, Chattanooga, 7,000 cotton undershirts, $1,085.

**Ordnance (Army)**

**Chattanooga Stamping & Enameling Co.**, Chattanooga, mines, $216,420.

**Supplies & Accounts (Navy)**

**Dempster Bros., Inc.**, Knoxville, drop bottom garbage type buckets, $9,300.

**Defense Plant Corporation (Federal Loan Agency)**

**Tennessee Production Corporation**, Nashville, to recondition a blast furnace for converting manganese ore into ferro-manganese at Rockwood, $75,000.

**Tennessee Powder Company**, Memphis, purchase of smokeless powder plant, $26,000,000.

## TEXAS

Value of Total Awards July 1, 1940 to June 16, 1941

| | |
|---|---|
| Army Contracts | $254,752,512 |
| Navy Contracts | 130,588,511[1] |
| U. S. Maritime Commission Emergency Ship Program | 66,198,750 |
| Farm Security Admin. (Agr.) (Defense Housing) | 108,693 |
| Civil Aeronautics Admin. (Commerce) (Airport Expansion Program) | 346,187 |
| W. P. A. Defense Projects (F. W. A.) | 14,043,346 |
| Defense Housing F. W. A. and C. H. A. (F. W. A.) | 712,500 |
| U. S. H. A. Defense Housing Projects (F. W. A.) | 2,791,829 |
| Public Buildings Admin., Def. Housing (F. W. A.) | 3,011,500 |
| Office of Education Defense Training (F. S. A.) | 2,493,886 |
| National Youth Administration (F. S. A.) (Defense Training Funds for 1941) | 2,792,474 |
| Defense Plant Corporation (F. L. A.) | 19,207,407 |
| Reconstruction Finance Corporation (F. L. A.) | 12,522,500 |

**CONTRACTS AWARDED MAY 16 TO JUNE 15**

**Quartermaster Corps (Army)**

**Conro Mfg. Co. of Texas**, Dallas, 200,000 twill trousers, $130,000.

**J. M. Wood Mfg. Co.**, Waco, 100,000 twill trousers, $65,000.

**Waco Garment Mfg. Co.**, Waco, 100,000 twill trousers, $65,000.

**T. S. Lankford & Sons**, Abilene, 25,000 twill trousers, $16,250.

**Miller Bros., Inc.**, Houston, 25,000 twill trousers, $16,250.

**Haggar Co.**, Waxahachie, 100,000 O. D. flannel shirts, $51,740.

**Conro Mfg. Co. of Texas**, Dallas, 100,000 twill jackets, $75,000.

**Williamson-Dickie Mfg. Co.**, Fort Worth, 340,000 twill jackets, $254,362.

**Clifton Mfg. Co.**, Waco, 2,500 wall tents, $14,900.

**Crawford-Austin Mfg. Co.**, Waco, 5,000 wall tents, $37,750.

**Sunshine Clothing Mfg. Co., Inc.**, San Antonio, 60,000 khaki cotton shirts, $30,000.

**Clifton Mfg. Co.**, Waco, 300,000 barrack bags, $152,618.

**Humble Oil & Refining Co.**, Houston, engine fuel, $1,595,400.

**Corps of Engineers (Army)**

**Brance-Krachy Co., Inc.**, Houston, transformers, Lowry Field, Denver, Colo., $5,440.

**Cyclone Fence Div., American Steel & Wire Co.**, Fort Worth, fencing materials, Aircraft Assembly Plant, Tulsa, Okla., $3,511.

**Ordnance (Army)**

**Talco Asphalt & Refining Co.**, Mt. Pleasant, naphtha, $4,920.

**McEvoy Co.**, Houston, assemblies, $3,447.

**Air Corps (Army)**

**Consolidated Aircraft Corp.** of San Diego, Calif., for construction of heavy bombers at Fort Worth plant, $163,640,000.

**Humble Oil & Refining Co.**, Houston, engine fuel, $1,291,950.

**Consolidated Aircraft Corp.**, San Diego, Calif., heavy bombers and spare parts (to be assembled in new Government-owned plant at Fort Worth), $226,636,200.

**Supplies & Accounts (Navy)**

**Universal Packing & Gasket Co.**, Houston, handhole & boiler manhole gaskets, $14,746.

(*Continued on page 52*)

## YORK SAFE & LOCK CO.

*Manufacturers of*

OUT-OF-SIGHT DOOR SAFES
A AND B LABEL SAFES
TWO HOUR CERTIFIED SAFES
ONE HOUR SAFES
WALL SAFES
FIRE RESISTIVE VAULT DOORS
BURGLARY RESISTIVE CHESTS
BANK AND SAFE DEPOSIT VAULT DOORS
SECURITY LOCKERS, SAFE DEPOSIT BOXES
BANK VAULT EQUIPMENT

•

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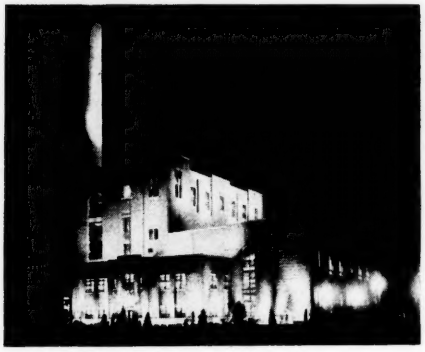
Manufacturers and Builders of the World's Greatest Vaults

## DESIGNERS ENGINEERS



*Fabricators of*

**STRUCTURAL STEEL BUILDINGS**
**BRIDGES—TANKS—BARGES**
**PASSENGER and CARGO VESSELS**

*—Five Plants—*

**The Ingalls Iron Works Co.**
Birmingham, New York (1 E. 42nd St.), Atlanta, Pittsburgh and New Orleans

*Address:* **Birmingham, Alabama**

## Industrial Opportunities in the Southeast

**In a growing tide, industry of varied kinds is moving into the Coastal Southeast. Within the past decade, which was a depression period for the country as a whole, the value of products manufactured within the six states served by the Coast Line—Virginia, North Carolina, South Carolina, Georgia, Florida and Alabama —has increased more than 50 percent.**

**The Southeast possesses the natural advantages which thriving industry needs, but intelligent planning, careful selection of plant locations with respect to raw materials, transportation facilities, power and markets are required to build for a sound future.**

**In the rush of present day affairs, why not use a free, reliable and experienced source for information concerning the area in which expansion is planned? The *Coast Line's* Development Service, with its knowledge of the territory served by the railroad and its experience in supplying the needs of many types of industrial establishments, is prepared to furnish complete information concerning available plant sites, raw materials, labor and market conditions to industries seeking the facts about the Southeast. Inquiries are invited and will be treated confidentially.**

**J. H. Hatcher**
*Manager Development Service*
*Wilmington, N. C.*

**ATLANTIC COAST LINE RAILROAD**




XUM

# New Methods and Equipment

## Fluorescent-Fixture Design Aided By Unique Photometer

A photometer for fixtures using fluorescent lamps has been developed by the Westinghouse laboratories at Cleveland. This photometer can measure light output and distribution of units as large as ten feet in diameter. It consists of a heavy rotating base which supports an adjustable arm. Measurements are made by means of a photocell mounted at the same height as the luminaire and at a given distance. As light strikes the cell, it is transformed into minute currents, which are easily measured. This current output is directly proportionate to the amount of light falling on the cell.

## Westinghouse "Flexair" Valves

To facilitate the control of pneumatically operated clutches, mechanical movements, and other devices on industrial and construction equipment, the Westinghouse Air Brake Co. has developed a new line of valves, named "Flexair" because their field of application is extensive, and their operating flexibility unusual. From the standpoint of installation these valves are advantageous because of remote control, uniform mounting, elimination of regulating valve, compactness and completeness, simple piping, variety of types and uniformity of parts. Operating efficiency is increased by graduated pressure, easy manipulation, initial sensitiveness, interlock of functions, three kinds of operation with some of the valves, and more skilful performance.

## New Lubricating System Announced By Alemite

A new, simply-installed progressive lubricating system is announced by the Alemite Division of the Stewart-Warner Corp. This system is centralized to permit simultaneous high pressure grease lubrication to any number of bearings on a given piece of industrial equipment. The lubrication of complete items of machinery is greatly speeded, and the machines may be lubricated while in operation.

## New Explosive Rivets Speed Production

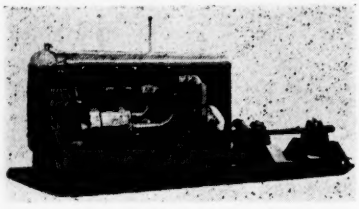
DuPont's new explosive rivets may prove an important factor in speeding American aircraft production and simplifying design. Now being manufactured in commercial quantities, the rivet is of an entirely new type. A high explosive is secreted in a cavity at the end of the shank. Heat applied to the rivet head by an electric gun detonates the charge. The explosion expands the charged end of the shank, thus forming a "blind" head and setting the rivet. The whole operation is performed from one side with greater ease and speed than is possible by any mechanical means now being used in aircraft factories.

## New G-E Furnaces For Heat Treating Tools

A new line of box-type furnaces for heat treating steel without scale or decarburization has been announced by the General Electric Co. The furnaces have been designed especially for use with drycolene, G-E's recently announced gas for improved heat treating of metals. Other atmospheres may be used, however, with the amount of scale and decarburization dependent upon the type of atmosphere used. A high-velocity flame curtain prevents the furnace from losing its atmosphere when the door is open.

## Diesel Sold For Use On Navy Housing Project

The Murphy Diesel Co. announces that it recently sold a model ME-650 200 H.P. Diesel power unit to the Richton Investment Co., of Richton, Miss. The unit is similar to the accompanying illustration, except that it lacks the steel engine enclosure. This type of unit has demonstrated its ability to perform twenty-four hour duty on defense projects. This particular engine will be employed to drive a gravel pump on the Navy Department Housing Project at Pascagoula, Miss., and later on the War Department U.S. Engineer Office project at Brookly Field, Mobile, Ala.



***Model ME-650 200 H.P. Diesel Power Unit of Richton***

## Redesigned General Electric Distance Relay

An improved Type GCX distance relay which incorporates many new features for the simplification of testing and maintenance has just been announced by the Switchgear Division of the General Electric Company. New factors include a timing unit with a cast metal base in which mounting bosses and bearing supports are brought together into a single unit, thus insuring a more positive alignment of parts and simpler testing and maintenance of gear meshes and bearing clearance. All this results in permanent timing characteristics

## Allis-Chalmers Improves V-Belt Structure

The Allis-Chalmers Manufacturing Co., of Milwaukee, Wis., announces that all its Tex-rope V-belts are of new laminated design, incorporating more strength and flexibility, greater service and longer life. The result of the smaller cords used is greater strength and less stretch. Internal belt degeneration is reduced by imbedding each cord in heat-dissipating rubber, and a live rubber bottom cushion absorbs the impacts of operation.

## Design Improvements Patented By Pomona Pump

The Pomona Pump Co., of St. Louis and Pomona, Cal., has recently been granted patents covering design improvements which increase pump efficiency as much as ten per cent. By forming the advanced ends of the guide vanes in a bulbous shape, the flow direction of the fluid is kept substantially tangential to the vane surface. This reduces eddy friction losses and prevents the formation of eddy currents.

## Plastic Makes Instrument Dials Stay White

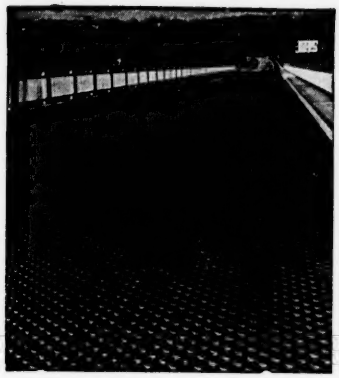
White instrument dials that are not discolored by high temperature, light, chemical fumes, or moisture are being made at the Westinghouse Meter Division, Newark, N. J., by means of a recently-developed liquid plastic material, which is sprayed on metal in much the same manner as paint. Under tests which have badly discolored previous white-lacquered dials, those sprayed with the new plastic have remained practically unchanged in color.

## New Glass-Electrode pH Indicator

Though simplified and stripped to essentials for low cost, easy operation, Leeds & Northrup's new Glass-Electrode pH Indicator offers as much accuracy as is needed in many laboratory measurements and in practically all plant tests. It retains full accuracy up to 85 F in atmospheres of 95% relative humidity. Measurements can be made consistently within its limit of error of adjustment, ±0.1 pH.

Light in weight, well balanced, it includes everything necessary for measuring pH. Speed and convenience are inherent in its simple construction, with adjustments being made very quickly. Measurements are made by pouring a sample into its self-contained beaker and reading pH directly from the meter scale.

## NOT A PENNY for MAINTENANCE



*Cairo Approach Catskill, N. Y.* — *N. Y. State Hy. Dept. Engineers*

The above KERLOW BRIDGE FLOOR was installed in 1936. Engineers report Kerlow flooring has been free of all maintenance, even including snow removal. For your next Bridge Floor (old or new) specify KERLOW proven floors.

All types of Industrial Floors and Safety Steps.

Agents in all principal cities.

*Write for special technical data*

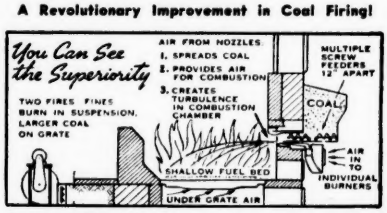
**KERLOW STEEL FLOORING CO.**

218-C Culver Ave., Jersey City, N. J.
Telephone BErgen 4-5560

## Fyr-Feeder MULTI-BURNER STOKERS

HERE is the stoker that is giving power plant engineers A NEW LEASE ON LIFE! Automatic . . . dependable . . . highly flexible . . . lots of overload capacity . . . easily installed at very moderate cost . . . and the best part about it is that FYR-FEEDER installations invariably pay for themselves in a very short time out of savings made by burning the cheaper grades and sizes of coal. For details, write or use coupon below.

**A Revolutionary Improvement in Coal Firing!**


You Can See the Superiority
AIR FROM NOZZLES
1. SPREADS COAL
2. PROVIDES AIR FOR COMBUSTION
3. CREATES TURBULENCE IN COMBUSTION CHAMBER
MULTIPLE SCREW FEEDERS 12" APART
TWO FIRES: FINES BURN IN SUSPENSION, LARGER COAL ON GRATE
COAL
AIR IN TO INDIVIDUAL BURNERS
SHALLOW FUEL BED
UNDER GRATE AIR

Each FYR-FEEDER has 2 or 4, or more spreader burners.

AMERICAN COAL BURNER CO.,
175 E. Superior St., Chicago, Ill.

☐ YES. I want to know what the FYR-FEEDER can do in our plant.

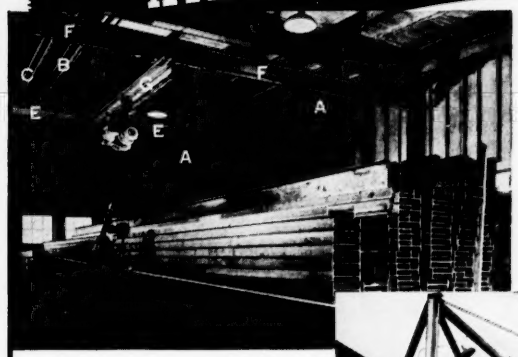
☐ Please mail descriptive literature.

Name _____

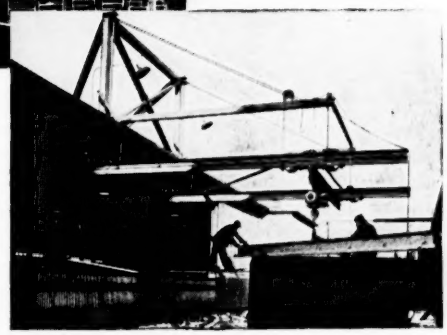
Street _____

Town _____

# New AMERICAN MONORAIL Criss-Cross System AIDS PRODUCTION




Criss-cross or 3-level American MonoRail System stores steel taken direct from gondolas. (Letters on equipment correspond with those on layout below.)



In unloading or loading parallel jibs (E" and F" on layout) are swung out from building interlocking with tracks (inside) carrying MonoRail bridge equipped with electric hoist . . . unloads and stores without rehandling.

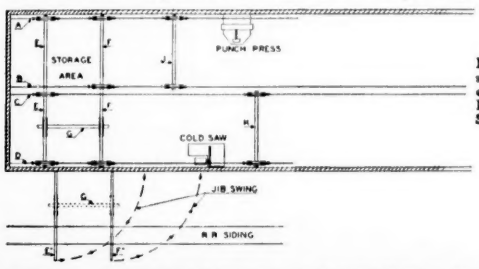
This newly developed MonoRail System of rails, cross rails and bridges is a most efficient and economical means of overhead handling in small plants.

With this system you can place the load exactly where you want it—in storage, fabrication or shipment.

By eliminating floor congestion American MonoRail increases plant capacity. By providing superior mechanized methods for lifting and carrying, it increases the productivity of labor. Skilled labor is not required in its use. Operation and maintenance, a minimum. In many plants this low cost, flexible handling system has soon repaid its cost.

Just what saving you can realize can be soon determined by an American MonoRail engineer. Write us about your problem.

Ask for free copy of "Blue Book" illustrating numerous installations.




Layout of shop showing criss-cross or 3-level MonoRail System.

**THE AMERICAN MONORAIL CO.**

13118 ATHENS AVENUE — CLEVELAND, OHIO

# Industrial News

## Plant Expansion At Scott Paper

A plant expansion program to cost $192,000 was recently announced by Thomas B. McCabe, president of the Scott Paper Co., of Chester, Pa. It consists of adding second and third floor to the present finishing building, and will extend operations chiefly in the industrial towel division. The program will be completed by November 1st.

## Allison Miller Assistant Sales Manager For Dodge Trucks

Appointment of Allison Miller as Assistant Sales Manager for the Truck Division of the Dodge Brothers Corp. was announced recently by L. D. Cosart, Sales Manager. Mr. Miller has been with Dodge since 1925, having spent most of his time in sales work. Previous to his present appointment he had held the post of Philadelphia Regional Manager.

## Sirrine Wins National Advertising Award

At the recent convention of the National Advertising Agency Network in Chicago, J. E. Sirrine & Co., consulting and designing engineers of Greenville, S. C., received an award for the second best advertising campaign appearing in general magazines and supported by trade papers.

This winning series, prepared by the Roland G. E. Ullman organization of Philadelphia, began with an advertisement entitled "The Tramp of Marching Feet Echoes in your Factory Aisles" which first appeared last year on the day the Germans marched into Belgium and Holland. This award is of special significance to advertising men, since the Sirrine campaign was modest and had to compete with extensive campaigns using color and appearing in many magazines on a nation-wide scale.

## Johnson Announces New All-Steel Heater

The Johnson Corporation, of Three Rivers, Michigan, has announced a new all-steel, lower cost version of the company's "Instant" water heater. It is used to heat water and other liquids with steam and can be hooked right up to high pressure steam lines without any need for reducing valves. Design and construction are exactly the same as in the original Johnson Copper Tube Heaters.

## Howell Joins Hawkins-Hamilton

The Hawkins-Hamilton Co., of Richmond, Va., has announced the addition of Frank K. Howell to the organization. Mr. Howell, a graduate of Stevens Institute, will be actively engaged in sales engineering work.

## Griscom-Russell Offices Moved

The Griscom-Russell Co., manufacturer of heat transfer apparatus, announces the new location of its Houston Office at 1548 Esperson Building, Houston, Texas. The company has also recently moved the Tulsa office to a new location at 810 Petroleum Building.

## Stephenson New Sales Manager for Tar and Chemicals Division of Koppers

G. C. Stephenson, of Pittsburgh, has been appointed sales manager of the Tar and Chemicals Division of the Koppers Company, according to an announcement by J. N. Forker, vice-president in charge of the Division. Mr. Stephenson joined the Koppers organization as a salesman in 1929, and has been manager of creosote sales for the past ten years. Before that he had been chief chemist at the wood treating plants of the A.T. and S.F. railroad and superintendent at the Port Reading, N. J., creosote plant of the Reading Co.

## N.I.A.A. Holds Annual Conference in Canada for First Time

This September the National Industrial Advertisers Association will hold its annual conference in Toronto, marking the first time that this Conference has been held in Canada. Present plans call for publication of the results of an advertising analysis made by Richard Manville, of Newell-Emmett Co., the presentation of the annual "Industrial Marketing" awards, and much discussion of the optimum use of advertising under present and future changing conditions.

The Conference should be well attended, as the Royal York Hotel, its headquarters, is but an overnight train ride from the principal United States centers of population. Entry into Canada requires no passport, and United States dollars command a premium in Canada.

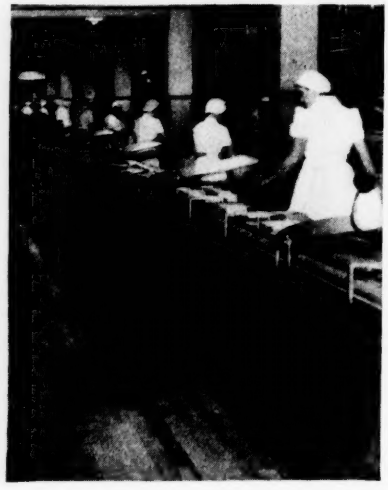
**TRAILERS—**

Catalogue—describing, with numerous illustrations, the Rogers line of trailers, with emphasis on the heavy duty trailers and the accessories available.

**Rogers Brothers Corp.**, Albion, Pa.


Especially Now, CONSIDER

Maple Floors



Keep a worker's feet happy and you've done much to maintain production. For who's at his best when feet are "dragging"?

Hot water baths may help tired feet, but prevention is better than "cure." Use a comfortable floor, like Maple.

You'll see Hard Maple in even heaviest-duty plants, because it's a floor that takes abuse with any, and yet is *comfortable.* Warm, dry, resilient—and it's easy to clean, inexpensive to maintain.

A streamlined floor for National Defense—smooth, traffic-fast, and so pleasant to work on, it keeps employees nearer their best during every precious working minute. Now, more than ever, industry needs Maple. Ask your architect about MFMA Northern Hard Maple, in strips or blocks.

**MAPLE FLOORING MANUFACTURERS ASSOCIATION**

**1797 McCormick Building, Chicago, Ill.**

Floor *with* MFMA Maple

REG. U.S. PAT. OFF.

(NORTHERN HARD)

CREOSOTED

PILING, POLES, LUMBER, TIES

CROSS ARMS and CONDUIT

ALSO

WOLMANIZED AND CHROMATED ZINC CHLORIDE TREATED LUMBER

Decay and Termite Proof—Can Be Painted

*Docks for Ocean Vessels*

**American Creosote Works, Inc., New Orleans, La.**

**Atlantic Creosoting Co., Inc.**

NORFOLK SAVANNAH NEW YORK

Plants at: New Orleans; Winnfield, La.; Louisville, Miss. Savannah, Ga.; Jackson, Tenn., and Norfolk, Va.

B. Mifflin Hood Co.

Chemical Stoneware:

ALL TYPES CHEMICAL BRICK AND SHAPES.

SPIRAL RINGS, DIAPHRAGM & RASCHIG RINGS.

Hood Kil-Kraft Tiles

Write For Literature

Quarry Tile:

ALL TYPES QUARRY FLOOR & WALL TILE.

ROOF TILE AND FACE BRICK.

Plants: DAISY, TENN. ADAIRSVILLE, GA. NORWOOD & GULF, N.C.

Offices: ATLANTA, GA. DAISY, TENN. CHARLOTTE, N. C.

# Trade Literature

**VENTILATION—**
Catalogue No. 14—describing and illustrating propeller fans, automatic shutters, fan guards, power roof ventilators, dark room ventilators, special high speed fans, portable floor fans, "night cooling" fans, kitchen ventilating fans, volume blowers, and the Ilg self-cooled motor. Special attention is paid to the principle of air change in a building, rather than air movement within a building. The inside air is forcibly ejected, while the fresh outside air is drawn in.
**Ilg Electric Ventilating Co.,** Chicago, Ill.

**HYDRO-FOIL PUMPS—**
Bulletin No. 148—uses photographs and line drawings to advantage in describing the Hydro-foil principal of propellor pumps. This principal is based on the assumption that water flow is analagous to air flow.
**Peerless Pump Co.,** Los Angeles, Calif.

**AIR AND GAS COMPRESSORS—**
Folder No. 193—describing, with photographs and text, compressors and vacuum pumps which are available in the following types: single-cylinder, single-stage, duplex, single and two-stage, tandem, and two-stage compressors; and single-cylinder, single and two-stage, and duplex vacuum pumps. Typical installations are also illustrated.
**Pennsylvania Pump and Compressor Co.,** Easton, Pa.

**INSULATION—**
Folder—describing and illustrating the uses of Reyn-O-Cell, a cellular fibre insulation which is available in a plain flexible blanket without backing, backed by either kraft or aluminum foil, enveloped in aluminum, or loose for hand packing. This is manufactured by the Building Products Division of the
**Reynolds Metals Co.,** Richmond, Va.

**MALLEABLE IRON AND PROMAL ELEVATOR BUCKETS—**
Folder No. 1912—covering complete price and dimensional data on elevator buckets for general service, for resistance to abrasion, for most severe service, for inclined elevators, and for handling clinging and lumpy materials.
**Link-Belt Co.,** Indianapolis, Ind.

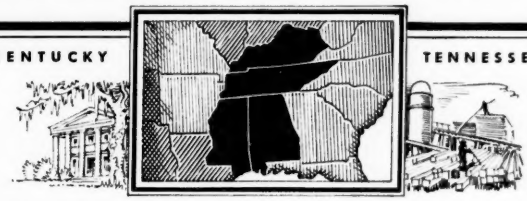
**"LESSONS IN ARC WELDING"—**
Book—published by The Lincoln Electric Co., 176 pages, 170 illustrations, including photographs and drawings. Second and completely revised edition presenting, in sixty lessons, the fundamental facts of welding, as accumulated in the twenty-four year experience of the company's school. An interesting feature of the book is the set of questions and answers accompanying each lesson, enabling the student to check his knowledge and progress. **Lessons in Arc Welding** (price, $.50) may be obtained from any recognized book dealer or directly from
**The Lincoln Electric Co.,** Cleveland, Ohio.

**CANNING MACHINERY AND SUPPLIES—**
Supplement to general catalogue 600—including tomato scalders, stringless bean slitters, single and continuous return exhausters, pulpers, finishers, pea and bean packing tables, juice heating tanks, horizontal retorts, can sterilizers, pea graders, fillers for tomatoes, peas, beans, and liquids, beet slicers, dicers and cutters, case stackers, stitchers for paper and corrugated cases, and cannery printers.
**A. K. Robins and Co., Inc.,** Baltimore, Md.

**WIRE ROPE SAFETY—**
Booklet—describing the safe use of wire rope. This includes tables for breaking strengths, safety factors for the principal rope applications, information on the effects of acceleration and the various constructions and grades of wire ropes, and suggestions for the correction of abrasion, bending fatigue, reverse bends, kinking, spooling, crushing, and corrosion. In addition, the booklet tells when to discard (and how to correct) rope with broken outer wires, how to lubricate rope, how to apply attachments, and how to inspect wire rope properly. Twenty-four pages in size, it is folded for pocket use.
**Reinecke-Ellis-Younggreen and Finn, Inc.,** Chicago, Ill.

**HERCULES POWDER—**
Booklet—contains data on the effects of Abalyn and Hercolyn, liquid esters of abietic acid, on blown asphalt. Much of this is in the form of tables and formulae, showing the fluidity of asphalt, its rate of penetration into asbestos and felt, and the changes in viscosity, flexibility, impact resistance, penetration values, and susceptibility factors caused by the esters. Also included are experimental data indicating the changes brought about in asphalt used for shingles, felt-base roofing, tar paper, insulating board, asbestos and cellulose board, felt-base linoleum and mastic tile, and road construction.
**Hercules Powder Co.,** Wilmington, Del.

**WATER SYSTEMS—**
Booklet—entitled "Now You Can Have Running Water" and folder, "Follow the Power Lines for Greater Water System Profits," the first directed to customers and the second to dealers in water systems. The three million farm and suburban homes which have electric service but no running water are considered the chief market. There is also available a "Standard Manual of Water Supply Systems," which gives information to dealers concerning selection, installation, and operation of domestic and commercial water systems.
**The F. E. Myers & Bro. Co.,** Ashland, Ohio.


*PROVIDING INVESTMENT CAPITAL*
*To The East South Central States*

"WAY DOWN SOUTH," though still a land of cotton, is now also a land of diversified agriculture and, increasingly, one of diversified industry.

With exceptional gulf and river transportation, rich mineral and forest resources, cheap fuel, advantages of native labor, equable climate, cheaper construction and lower living costs, recent acceleration of industrial activity in this section promises important further development.

Lacking large financial reserves of their own, these States, like other developing areas, have turned in part to investment organizations such as our own for assistance in financing their growing requirements — both corporate and municipal.

★ ★ ★

In the course of its nationwide activities, Halsey, Stuart & Co. Inc. has participated as an original underwriter in about 100 bond issues, totaling over $250,000,000 of corporations and municipalities in the East South Central States.

*Seventh of a Series of excerpts from our brochure, "Providing Nationwide Investment Capital . . . 1903-1941," a copy of which will be sent upon request.*

CHICAGO, 201 S. LA SALLE STREET · NEW YORK, 35 WALL STREET · AND OTHER PRINCIPAL CITIES

**HALSEY, STUART & CO. INC.**

**ELBERTON, GEORGIA**
(1940 population 6,187)

Offers many industrial advantages. Five year exemption on city and county taxes to new industries. Served by Seaboard also Southern Railroads, and five motor truck lines. Abundance native born labor. Ideal climate. Full local co-operation.
**Address, Chamber of Commerce, Elberton, Ga.**

**GLAMORGAN**
**PIPE & FOUNDRY CO.**
**LYNCHBURG, VA**

*We have helped*
many businesses that have brought us their financial problems.

*Correspondence invited.*

**BALTIMORE COMMERCIAL BANK**
GWYNN CROWTHER, *President*
BALTIMORE, MARYLAND
Member Federal Reserve System
Member Federal Deposit Insurance Corporation

DISC GUIDING GOES MORE THAN HALF-WAY

in LUNKENHEIMER
IRON BODY
GATE VALVES

THE GUIDE RIBS IN THE BODY AS WELL AS THE GUIDE CHANNELS IN THE DISC ARE ACCURATELY MACHINED.

No half-way measures go in manufacturing Lunkenheimer Iron Body Gate Valves. With disc guiding, for example, not only are the guide channels in the disc accurately machined, but *the guide ribs in the body as well* — to extremely close tolerances.

With this thorough method of disc guiding, thrust of the disc is always against guides and not against seat faces. Chattering and dragging on seats are eliminated assuring tight closure and longer seat and disc life. Fewer repairs and replacements are necessary, materially reducing maintenance expense, with resultant lower valve cost.

Lunkenheimer Iron Body Gate Valves also embody many other refinements which place them in a class above ordinary gate valves. Exceptionally heavy bronze seat rings; disc of true solid construction; new development in stem bronze with its extra resistance to wear; non-corrosive bearings at all points; uniform interchangeability of parts; dense sound castings of great strength; all of these features mean savings for the user in time and money over long periods of service.

For full information on the complete line of Lunkenheimer Iron Body Gate Valves send for copy of Catalog 78.

ESTABLISHED 1862
THE LUNKENHEIMER CO.
"QUALITY"
CINCINNATI, OHIO, U. S. A.
NEW YORK CHICAGO
BOSTON PHILADELPHIA
EXPORT DEPT. 318-322 HUDSON ST., NEW YORK

Buy from your local Lunkenheimer distributor! He is co-operating in every way to give you the kind of service you so vitally need for the National Defense Program.

6-82C-62


# National Defense Program Awards in the South

(*Continued from page* 46)

**N. Marsico**, an Individual trading as Denison Mattress Factory, Denison, felted cotton mattresses, $5,183.
**Humble Oil & Refining Co.**, Houston, aviation gasoline, $295,182.
**Humble Oil & Refining Co.**, Houston, navy aviation gasoline, $30,000.

**Yards & Docks (Navy)**

**Harnischfeger Corp.**, Milwaukee, Wisconsin, 10-ton bridge crane for Naval Air Station, Corpus Christi, $25,000.
**Harnischfeger Corp.**, Milwaukee, Wisconsin, three 5-ton bridge cranes for Naval Air Station, Corpus Christi, $13,753.

**(U. S. Maritime Commission)**

**Pennsylvania Shipyards, Inc.**, Beaumont, 10 C-1 cargo vessels, (amount of award not available).

## VIRGINIA

**Value of Total Awards July 1, 1940 to June 16, 1941**

| | |
|---|---|
| Army Contracts | $110,711,574 |
| Navy Contracts | 745,999,667[1] |
| Farm Security Admin. (Agr.) (Defense Housing) | 752,875 |
| W. P. A. Defense Projects (F. W. A.) | 3,744,431 |
| U. S. H. A. Defense Housing Projects (F. W. A.) | 5,655,066 |
| Public Buildings Admin., Def. Housing (F. W. A.) | 3,634,000 |
| Office of Education Defense Training (F. S. A.) | 1,154,951 |
| National Youth Administration (F. S. A.) (Defense Training Funds for 1941) | 1,078,780 |
| Reconstruction Finance Corporation (F. L. A.) | 6,480 |

**CONTRACTS AWARDED MAY 16 TO JUNE 15**

**Quartermaster Corps (Army)**

**Harwood Mfg. Corp.**, Marion, 150,000 cotton drawers, $37,032.
**N. & W. Overall Co., Inc.**, Lynchburg, 60,000 twill jackets, $43,200.
**Vinton Construction Co.**, Silver Spring, generator set in Water Filtration Plant at Big Bethel, $23,500.
**Horace E. Dodge Boat & Plane Corp.**, Newport News, 42-ft. rescue boats, $385,965.
**Blue Ridge Overall Co.**, Christiansburg, 250,000 twill jackets, $187,500.
**Noland Co., Inc.**, Rosslyn, 3,000 batteries, $720.

**Corps of Engineers (Army)**

**American Bitumul Co.**, Baltimore, Md., paint for Langley Field, $2,255.
**Bruce-Flournoy Motor Co.**, Norfolk, stake body trucks, $3,640.
**Paxton Co., Inc.**, Norfolk, locks, hinges, etc., $2,081.
**Virginia Bridge Co.**, Roanoke, noses, $3,184.

**Chemical Warfare (Army)**

**O'Sullivan Rubber Co.**, Winchester, outlet valves, $11,000.
**Miller Mfg. Co.**, Richmond, packing boxes, $4,874.
**Emporia Mfg. Co.**, Emporia, packing boxes, $7,350.

**Ordnance (Army)**

**The Tredegar Co.**, Richmond, shells, $175,536.
**Miller Mfg. Co., Inc.**, Richmond, boxes for fuze, $356,000.
**Tredegar Company**, Richmond, artillery ammunition, $200,837.
**Norfolk Bagging Co.**, Norfolk, gunny sacks, $3,990.

**Yards & Docks (Navy)**

**Burns & Roe, Inc.**, New York, New York, improvement to Power Plant, Naval Operating Base, Norfolk, (Cost-plus-fixed-fee Basis) Estimated cost, including fee, $1,225,000.
**Wright Mfg. Division of American Chain & Cable Co., Inc.**, York Pennsylvania, 2-ton bridge crane for Naval Air Station, Norfolk, $2,514.
**Harnischfeger Corporation**, Milwaukee, Wisconsin, 15-ton bridge crane for Naval Air Station, Norfolk, $30,940.

**Supplies & Accounts (Navy)**

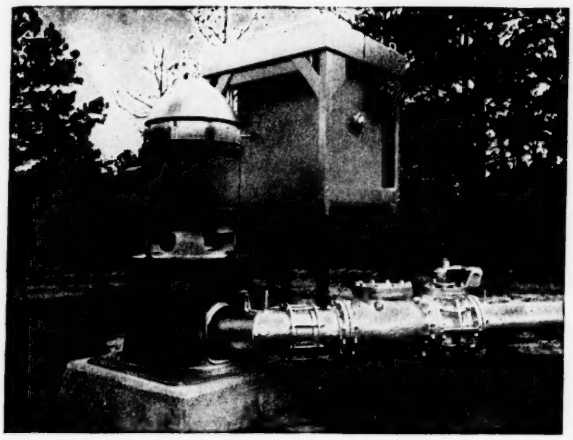
**The Old Dominion Paper Co.**, Norfolk, memorandum, tracing paper & writing sulphite pads, $90,599.
**National Fruit Product Co., Inc.**, Winchester, Grade B canned apples, $17,850.
**Richmond Engineering Co., Inc.**, Richmond, buoys, $18,538.

## WEST VIRGINIA

**Value of Total Awards July 1, 1940 to June 16, 1941**

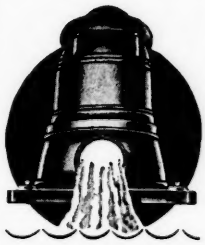
| | |
|---|---|
| Army Contracts | $29,903,230 |
| Navy Contracts | 52,232,393 |
| W. P. A. Defense Projects (F. W. A.) | 285,082 |

(*Continued on page* 60)



# Better Put In Your Own WELL WATER SUPPLY

A NATIONAL emergency exists! You have been called upon to "keep your wheels turning"—and production at its peak. A water shortage, or failure would play havoc with your program. Save time, worry and possible shut down by putting in your own Well Water System.



Select the most dependable system made. That means Layne. Select it for its proven reputation of highest efficiency, unquestionable quality and outstanding engineering features. Select a Layne Well Water System because the Layne organization has the men, equipment and skill to do the job complete and right, in the shortest possible time—anywhere in the United States or possessions.

Layne Engineers will cooperate gladly in making a survey of your water supply needs. They are qualified specialists in Well Water Supply problems, and will collaborate with you, your engineer or plant superintendent. There is no obligation.

**AFFILIATED COMPANIES**

LAYNE-ARKANSAS CO. STUTTGART, ARK.
LAYNE-ATLANTIC CO. . . . NORFOLK, VA.
LAYNE-CENTRAL CO. . . MEMPHIS, TENN.
LAYNE-NORTHERN CO., MISHAWAKA, IND.
LAYNE-LOUISIANA CO. LAKE CHARLES, LA.
LAYNE-NEW YORK CO. . NEW YORK CITY, AND PITTSBURGH . . . . . PA.
LAYNE-NORTHWEST CO. MILWAUKEE, WIS.
LAYNE-OHIO CO. . . . COLUMBUS, OHIO
LAYNE-TEXAS CO. . . . HOUSTON AND DALLAS . . . . . TEXAS.
LAYNE-WESTERN CO., KANSAS CITY, MO. CHICAGO, ILL. . . . OMAHA, NEBRASKA
LAYNE-WESTERN CO. OF MINNESOTA MINNEAPOLIS . . . . . MINN.
LAYNE-BOWLER NEW ENGLAND COMPANY. BOSTON . . . . . MASSACHUSETTS.
INTERNATIONAL WATER SUPPLY, LTD. LONDON . . . . . ONTARIO, CANADA

"For Defense" is a new bulletin just issued which pictures and lists defense work completed for air fields, army camps, munition plants, etc., by Layne. It is free. Address

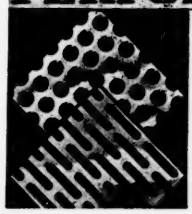
LAYNE & BOWLER, INC.
Memphis, Tenn.

LAYNE

**PUMPS & WELL WATER SYSTEMS**

*For Municipalities, Industries, Railroads, Mines and Irrigation*

**PERFORATED METAL**



INDUSTRIAL
ORNAMENTAL
Any Metal
Any Perforation

The Harrington & King PERFORATING Co.

5631 Fillmore St., Chicago—114 Liberty St., N. Y.

**PERFORATED METALS**

For every purpose, Industrial and Ornamental

Steel, Stainless Steel, Monel Metal, Brass, Copper, Bronze, Aluminum, Zinc, Lead, Tin Plate and all other metals or materials perforated as required, and for all kinds of screens. Send for new Catalog.

CHARLES MUNDT & SONS

490 Johnston Ave., JERSEY CITY, N. J.

**ERDLE PERFORATED SHEET METALS**

SIXTY YEARS' experience in Metal Perforating is your assurance of a satisfactory job.

Made to your specifications and shipped promptly.

*Metal Sample Plate on Request.*

ERDLE PERFORATING COMPANY,

*171 York Street, Rochester, N. Y.*

**HENDRICK**

PERFORATED METALS

Screens and grilles in all commercially rolled metals, all standard and special designs.

*Write for literature*

HENDRICK MANUFACTURING CO.

44 Dundaff Street, Carbondale, Pa.

Manufacturers of Mitco Open Steel Flooring, Mitco Shur-Site Treads and Mitco Armorgrids.

## Plant Expansions in the Southern Coastal Area

(*Continued from page* 35)

cane a cattle feed priced so low that Florida cattlemen can afford it.

Newest contributor to Florida's fast building program, however, is the Dixie Lime Products factory at Reddick, Fla., where a secretly prepared masonry mortar is being manufactured for the building trade. The new plant is located between Ocala and Gainesville near the Atlantic Coast Line Railroad. Known as "Diximix" the new masonry mortar is the invention of John A. Blank of Ironton, Ohio, and his son, Alvin Blank of Pueblo, Mexico.

Preparation of "Diximix," which is turned out in one cubic foot bags weighing 62½ pounds, is an interesting process. The entire mixing takes only 15 minutes in a five foot wide, 22 foot long steel cylinder containing 14 tons of steel grinding balls. The product remains sound and volume constant.

To prepare "Diximix," the separate ingredients of the mortar are stored in huge steel silos at the head of a battery of machinery. Feeder lines lead from these silos into the mixing machinery which is a continuous-line type. From one silo comes the siliceous materials, from another quick lime and formula elements. These are automatically proportioned as they enter the mixer. Here, water controlled by a delicately adjusted meter is introduced. The combined materials are carried by a screw conveyor through a specially designed fifty-five foot long hydrator.

The Williamston Peanut Company recently acquired a plant at Williamston, N. C., which had been idle for several years and began operations. The plant employs between 35 and 40 persons, with a payroll of approximately $700.00 per week, and is engaged in cleaning and shelling peanuts. The capital invested is understood to be approximately $100,000.00, while the annual value of the output is understood to be about $500,000.00.

Another Williamston industry which is expanding is the Williamston Package Manufacturing Company, which engages in the manufacture of vegetable hampers and baskets. The firm employs between 150 and 160 laborers, with a payroll of approximately $2,500.00 per week. The investment in this plant amounts to $150,000.00 and its output is approximately 9,000 packages per day.

At Belgrade, N. C., the Superior Stone Company is developing a rock quarry and has a deposit of about 1,000,000 tons of shell rock, which can be used in various kinds of construction work, including highway construction. The industry employs about 50 laborers at the quarry.

The Peninsular Lurton Company, with headquarters at Pensacola, Fla., has established a naval stores yard at Pearson, Ga., and commenced the construction of a gum procession plant during the latter part of 1940, the building having just been completed. It is expected that the machinery will soon arrive and be installed. Pearson is centrally located in the naval stores producing area and the company expects to draw crude gum from the surrounding territory, processing same and shipping the turpentine and rosin, which will be in a hot state, in tank cars to Eastern and Western points. It is understood that the plant represents an investment of approximately $35,000.00. Its output will have a value of approximately $2,000.00 per day, and it will have a weekly payroll of $1,000.00.

The Calypso Veneer Company of Calypso, N. C., has been formed to operate a veneer plant at that point and machinery is now being installed. The new plant will give employment to about 50 persons.

The meat packing industry has also felt the stimulus of present direct and indirect defense demands. According to the Savannah *Morning News*, Meddin Brothers contemplate spending $60,000.00 in improving their meat packing plant at Savannah. Drs. J. M. Sutton and Joe Johnson have announced construction of a small abattoir at Sylvester, Ga., at an estimated cost of $15,000.00 The Carolina Packing Company is constructing a packing plant at cost of approximately $80,000.00 at Smithfield, N. C., scheduled to be opened about July 1st.

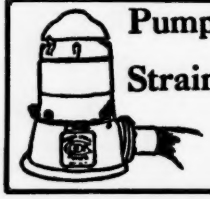
## Priorities

(*Continued from page* 44)

are assigned a rating of A-9.

The present order is designated as a temporary measure to regulate the available supply so that urgent defense demands can be satisfied.

The new order provides that any customer for borax or boric acid who is desirous of obtaining deliveries which have been assigned specific preference ratings shall, before such deliveries are made, submit an Affidavit of Necessity (form PD-31) to the Priorities Division and a copy to his supplier.

**Pumps**—Deep-Well Plunger and Turbine
**Strainers**—and other well supplies
WATER PRESSURE SYSTEMS
**A. D. COOK, Inc.**
Lawrenceburg, Indiana

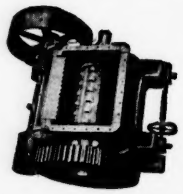
**Ornamental and Industrial**
**PERFORATED METALS**
We carry a large stock for immediate shipment.
*Send for Our Catalogue.*
Manhattan Perforated Metal Co., Inc., 43-17 37th St., L. I. City, N. Y.

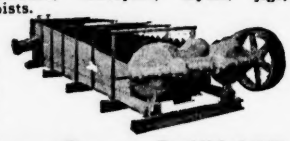
**LINK-BELT**
Malleable Iron

Promal and Steel
**BUCKETS**

● There is a Link-Belt bucket of suitable size and type to meet any elevating requirement. Link-belt buckets are recognized as the standard in shape and dimensions, and are noted for their strong, smooth, uniform construction and design. Large stocks assure prompt delivery.

LINK-BELT COMPANY
Atlanta, Philadelphia, Dallas, Baltimore, New Orleans, Houston, Los Angeles. Other offices, warehouses and distributors in principal cities.
7604-B



**McLANAHAN EQUIPMENT**
**CRUSHERS**
Single and double roll and jaw crushers, hammer mills, super dry pans—steel log washers and scrubbers, sand drags, revolving and vibrating screens, elevators, conveyors, dryers, jigs, hoists.
**SCREENS**
Complete portable, semi-portable and stationary crushing, screening and washing plants for different capacities of any materials.

**McLanahan & Stone Corp.** *Established 1835* HOLLIDAYSBURG, PENNSYLVANIA

ESTABLISHED 1905

Strand
FLEXIBLE SHAFTS

THIRTY-SIXTH YEAR

REGISTERED TRADEMARK

**FLEXIBLE SHAFTS AND MACHINES**

*— EXCLUSIVE MANUFACTURERS —*

IN ALL PARTS OF UNITED STATES

SOUTH—EAST—NORTH—WEST

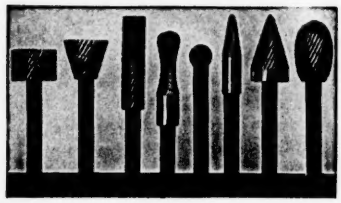
**— STRAND —**

**HIGH QUALITY MACHINES ARE SERVING INDUSTRY**

SIXTY TYPES AND SIZES
1/8 to 3 H.P.

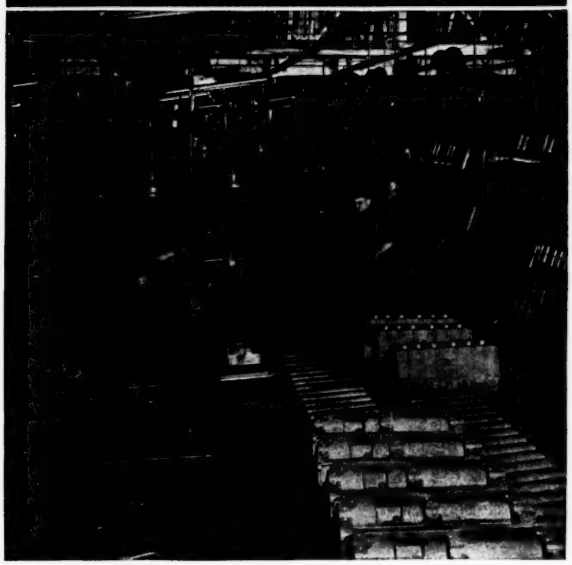
*OUR NEW 80-PAGE CATALOG NOW READY FOR DISTRIBUTION.*

*GROUND ROTARY CUTTERS*



**N. A. STRAND & COMPANY**
MAIN OFFICE AND FACTORY
5001 - 5009 No. WOLCOTT AVE., CHICAGO

MATHEWS
CONVEYERS
*Engineered for the Job*



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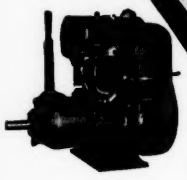

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*World's Largest Builders of Heavy-Duty Air-Cooled Engines*



XUM

# Important New Industrial Plants in the South

(*Continued from page* 25)

**JACKSONVILLE** — fuse and detonator plant—War Department will probably start work about Aug. 15 on $33,000,000 fuse and detonator plant on 9000 acre site; reported to be operated by Hercules Powder Co.; tentative plans completed.

**LITTLE ROCK**—picric acid plant—U. S. Engineer Office, Little Rock, will make gross appraisal of 7000 acre site near Marche for government picric acid plant; site is approximately 4 miles long by 2½ miles wide; estimated cost $8,000,000.

**STAMPS** — gas treatment plant — Carter Oil Co., subsidiary of Standard Oil Co., of New Jersey, 30 Rockefeller Plaza, New York, will begin work about July 1 on plant in McKamie field of Lafayette County to treat sour gas; will be used by Arkansas Power & Light Co. in the $3,000,000 generating station to be erected; probable location of treatment plant, Stamps.

## GEORGIA

**WAYCROSS**—shoe plant—Rubin Brothers Shoe Factory double capacity of present plant; cost $80,000; city and Ware County to finance portion.

## KENTUCKY

Pipe line—Hope Natural Gas Co., Union Bldg., Charleston, W. Va., reported, purchasing right of ways for construction of gas pipeline from eastern Kentucky to a point near Clarksburg, W. Va., at cost of several million dollars.

**LOUISVILLE**—expansion—Defense Plant Corp., RFC subsidiary, authorized an increase of $415,969 in its lease agreement with Reynolds Metals Co. for its plant at Louisville; approximately $69,581 will be used for land and buildings, and $349,133 for equipment; original commitment $2,504,611; extruded aluminum products for use in aircraft industry will be manufactured.

## LOUISIANA

Shell loading plant—government, reported considering sites in Louisiana for shell loading plant to assemble ammunition for the army; estimated cost $25,000,000; probable location near Shreveport.

**ABBEVILLE** — office — Favrot & Reed, Architects, Nola Bldg., New Orleans, received bids June 12, change of date, for 2-story concrete frame office building for Louisiana State Rice Milling Co.; reinforced concrete foundation; steel sash; millwork, etc.; following are prospective estimators: General, Perrilliat-Rickey Construction Co., S. Rendon and Eve Sts., New Orleans; J. B. Mouton, Lafayette; T. Miller & Sons; A. M. Mutersbaugh; W. J. Quick and Hudson East, all Lake Charles; J. C. Murphy, 212 S. 14th, Baton Rouge; James McDaniel & Sons, Crowley; air-conditioning, United Gas Corporation, New Iberia; R. T. Mutersbaugh, Lake Charles; Dixie Electric Co., Lafayette; American Heating & Plumbing Co., 829 Baronne; Equitable Equipment Co., 410 Camp; Frigidaire Corp., 4436 Toulouse; General Electric Supply Corp., 733 Tchoupitoulas, all New Orleans.

**BATON ROUGE**—rubber plant addition—Standard Oil Co. of Louisiana, announced immediate construction of a synthetic rubber and chemical project at its refinery; involve expenditure of from $12,000,000 to $15,000,000 during the next 15 months; one group of plant to produce various solvents, another group new type of synthetic rubber, a third part of expansion program includes more than doubling present capacity of Standard's synthetic buna rubber plant and still another part of the project will produce various raw materials for the solvents, alcohol and synthetic rubber manufacture.

**LAKE CHARLES**— addition — Mathieson Alkali Works plans erecting $6,500,000 unit for manufacture of metallic magnesium for aircraft industry; work to begin Aug. 1; units to be constructed include lime plant, reaction plant, an electro-chemical plant, chlorine plant and a steam and electric power plant.

**MINDEN**—shell plant—War Dept. considering locating $30,000,000 shell loading plant on Bayou Dorcheat in Webster Parish about 10 miles west of Minden.

**STERLINGTON**—ammonia plant — Commercial Solvents Co., 17 E. 42nd St., New York, reported, will soon let contract for $16,750,000 ammonia manufacturing plant.

## MARYLAND

**BALTIMORE** — manufacturing — Milcor Steel Co., Fayette & Oldham Sts., has plans in progress for manufacturing building, Erdman Ave. and Philadelphia Rd.; 1-story masonry.

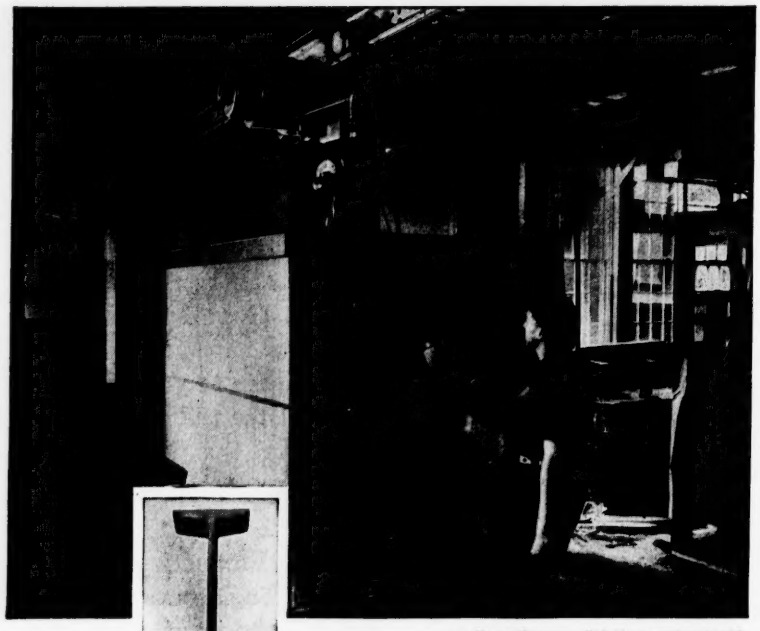
## MISSOURI

TNT plant—War Department considering sites in Missouri for location of proposed $100,000,000 TNT plant; one of the sites under consideration at Malta Bend, near Marshall, 75 miles from Kansas City.

**ST. LOUIS**—gun turret plant — government is planning to construct $10,000,000 gun turret plant on tract adjoining Emerson Electric Co.'s plant at 8100 Florissant Rd., St. Louis county company is expending $1,000,000 for tools, equipment and materials in connection with the contract; War Dept. has also obtained option on 20-story Mart Bldg., Twelfth Blvd. and Poplar St.; McQuay-Norris Manufacturing Co., 2320 Marconi St., has contract for parts for tanks.

**ST. LOUIS**—ordnance plant—War Dept.

(*Continued on page* 58)

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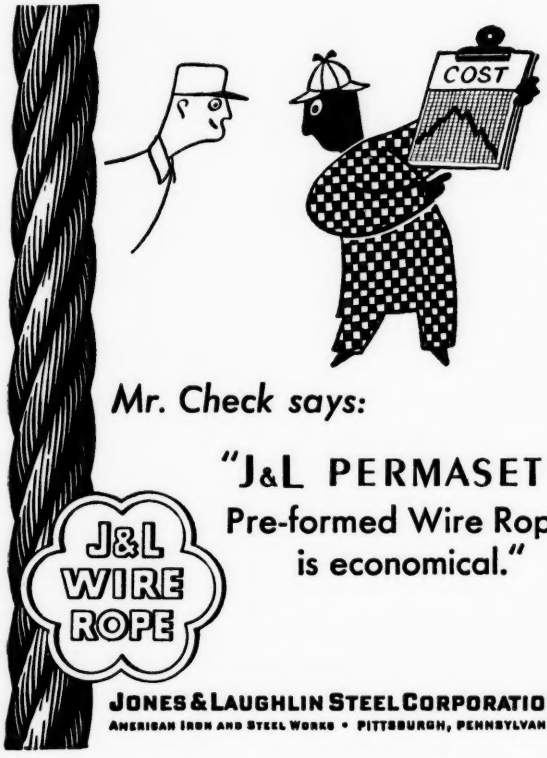


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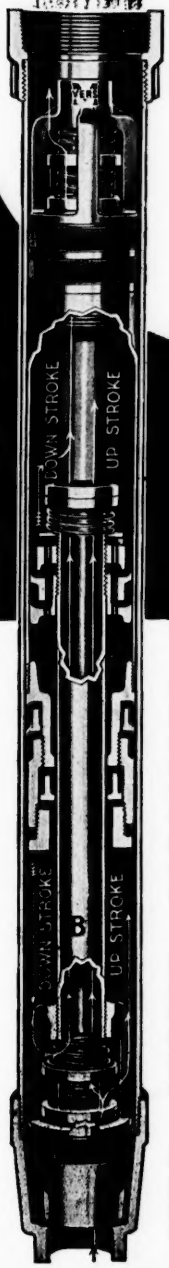


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PUMPS - WATER SYSTEMS - HAY TOOLS - DOOR HANGERS

## Important New Industrial Plants in the South

(*Continued from page 56*)

announced a $58,850,000 expansion of small-arms plant at Goodfellow and Bircher Blvds.; tripling present plant; construct additional buildings.

**ST. LOUIS**—plant—American Can Co., 41 Branch St., acquired 17 acres adjoining the Arena and Forest Park Highlands for possible erection of branch plant, primarily to manufacture tin containers.

**WELDON SPRINGS**—ordnance plant—War Dept. announced a $20,000,000 expansion at TNT plant now under construction in Charles County; double manufacturing capacity.

### NORTH CAROLINA

Arms factory—War Department plans erection of plant to manufacture small arms, sites at various cities under consideration; estimated cost $30,000,000.

**WILMINGTON** — pier — North Carolina Shipbuilding Co. applied to U. S. Engineer's Office for permission to construct a pier and 3 shipways on the east side of the Cape Fear River immediately below Sunset Park.

### OKLAHOMA

Magnesium plant—Grand River Dam Authority, T. P. Clonts, general manager, Vinita, considering establishment of a magnesium reduction plant; various sites under consideration, including Pryor, and in vicinity of Muskogee; estimated cost $12,000,000.

Pipe line—Pure Oil Co., Tulsa, will lay 36 mile extension of present 16-mile, 6-in. artery from its Cumberland field in Bryan and Marshall counties to Fitts pool of Pontotoc county.

### SOUTH CAROLINA

**CHARLESTON**—metal plant — Reynolds Metal Co., 810 E. Franklin St., Richmond, Va., reported, considering site at Charleston for aluminum plant; negotiating for properties of Associated Gas & Electric Co. in South Carolina.

**CHARLESTON**—ship plant — Charleston Shipbuilding & Drydock Co., L. Louis Green, V. P., plans enlargement of shipyard over Gadsden creek; will drive steel piling against the bulkhead line and fill in the marsh land; erect 2000-ton marine railway; add 2 building slips; erect 280-ft. long building at foot of Calhoun St., smaller shops, tracks and trestles will be added.

### TENNESSEE

**COPPERHILL**—oleum plant—War Dept. selected site for erection of oleum plant; cost of machinery, plant and equipment $2,375,000; oleum is a sulphuric acid compound used in the manufacture of the explosive TNT; plant will be owned by the government and operated by Tennessee Copper Co. of New York; will be built adjoining a similar plant of the Copper company.

**MILAN**—ordnance plant—War Dept., announced a $5,395,000 expansion at $34,000,000 shell loading plant to be operated by Procter & Gamble Defense Corp., of Cincinnati, Ohio.

**ROCKWOOD**—blast furnace—Jesse Jones, F. L. A. announced that Defense Plant Corp., RFC subsidiary, authorized an amendatory lease agreement with Tennessee Production Corp., Nashville, increasing present commitment of $375,000 to $450,000, to recondition a blast furnace in the plant at Rockwood; will be used to convert manganese ore into ferromanganese.

### TEXAS

**BOWIE** — yam plant — Texas Chemurgic Industries, Inc., Southland Life Annex, Dallas, will acquire site in Montague County for sweet potato dehydration unit and yam flour mill; investment of $100,000; plant 3,000 acres in sweet potatoes; capacity of 100 tons daily; machinery ordered.

**FREEPORT** — plant enlargement — Dow Chemical Co., will double size of magnesium plant.

**HOUSTON**—struts—Hughes Tool Co., 300 Hughes St., acquired plant on Beaumont Rd., will be reconditioned, retooled and expanded for manufacture of struts for heavy bombers; building improvements to cost $809,000; equipment, $2,850,000; 32 acres of additional land will be acquired at cost of $32,000; capacity 600 struts per month, 300 for B-25 bombers to be manufactured by North American Aviation Corp. and to be assembled in a new plant in Dallas and 300 for B-26 Martin Bombers; will be financed by $3,725,000 government funds and operated by Hughes Tool Co.

**LONGVIEW**—gas plant—Lone Star Gas Co., Dallas, reported plans construction of gas recycling plant in Gregg county's deep gas field, southwest of Longview; estimated cost $300,000.

**TEXARKANA**—shell loading plant—War Department will erect $45,000,000 shell loading plant on 20,000 acres in vicinity of Leary and Hooks in Bowie county, 10 miles from Texarkana; plans call for production capacity 100,000 shells daily.

**TYLER**—canning plant—E. C. Christensen of Weslaco will erect tomato canning plant; capacity 400,000 lbs. tomatoes daily.

### VIRGINIA

**RADFORD** — ordnance works — Hercules Plant of Radford Ordnance Works, reported, will enlarge plant by 1,200 acres in Horseshoe area near Cowan in Pulaski County.

**STAUNTON** — weaving mill — Staunton Textile Corp., subsidiary of Celanese Corporation of America, New York, reported, acquired a 148 acre tract 6 miles northeast of Staunton for construction of weaving mill, first unit to cover 3 acres; work to begin in July; initial unit investment of $500,000; will weave Celanese fibre shipped from corporation's Narrows, Va. plant; woven cloth to be shipped to other Celanese plants for dyeing and finishing.

(*Continued on page 60*)

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## Important New Industrial Plants in the South

(*Continued from page 58*)

### WEST VIRGINIA

**BELLER** — expansion — E. I. duPont de Nemours Co., Wilmington, Del., plans expansion at synthetic ammonia plant, now nearing completion.

**CHARLESTON** — expansion — Carbide & Carbon Chemicals Corp., reported, has option on 170 acres near airport for probable expansion for manufacture of base materials for plastics.

**FAIRMONT** — glass factory — Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa., plans erection of glass factory adjacent to the fluorescent lamp plant; G. W. Schusler, superintendent of construction, Fairmont; grading for the 2 units of glass plant completed and construction plans ready; estimated cost $1,250,000; will consist of 2 units, each 400 feet long and 275 ft. wide and of construction similar to the nearly completed lamp plant; will be located immediately adjacent to the east of the lamp plant and on a higher level; conveyor system has been planned to take the finished glass product from glass plant to lamp plant; foundation of the administration plant located at the entrance to the grounds is under way, completion by July 1; at an early date work will begin on 3 buildings, for hydrogen storage, lacquer and argon storage; construction of an electric power sub-station is scheduled for Oct.

**MORGANTOWN** — addition — War Dept. authorized expansion of ammonia plant now under construction to be operated by E. I. du Pont de Nemours Co., Wilmington, Del.; cost of present plant $15,000,000, of expansion, $18,500,000.

## National Defense Program Awards in the South

(*Continued from page 52*)

| | |
|---|---|
| Office of Education Defense Training (F. S. A.) | 1,199,684 |
| National Youth Administration (F. S. A.) (Defense Training Funds for 1941) | 754,558 |
| Reconstruction Finance Corporation (F. L. A.) | 44,890 |

**CONTRACTS AWARDED MAY 16 TO JUNE 15**

**Quartermaster Corps (Army)**

Blue Jay Mfg. Co., Huntington, 300,000 twill trousers, $195,000.

Casey Jones, Inc., Huntington, 150,000 twill trousers, $97,500.

The D. E. McNicol Pottery Co. of W. Va., Clarksburg, thick white chinaware, $142,711.

Warwick China Co., Wheeling, chinaware, $246,934.

Blue Jay Mfg. Co., Huntington, 200,000 cotton mattress covers, $240,879.

**Ordnance (Army)**

International Nickel Co., Inc., Huntington, cylinders and rods, $47,968.

**Medical Corps (Army)**

The D. K. McNicol Pottery Co., of W. Va., Clarksburg, mess equipment, $66,469.

**Marine Corps (Navy)**

Warwick China Co., Wheeling, chinaware, $7,264.

**Supplies & Accounts (Navy)**

Weirton Steel Co., Weirton, sheet steel, $208,589.

Wheeling Steel Corp., Wheeling, black flat Type I and II sheet steel, $38,188.

## South's Contracts at Peak Point

(*Continued from page 23*)

scheduled to have twice the power output of Norris Dam.

Construction is to be continued at Clearwater Dam on the Black River, near Piedmont, Mo., under bids received early in the month by U. S. Engineers at Little Rock, Ark. Additional work to be done by force account at Fort Loudoun Dam of the Tennessee Valley Authority will cost $15,925,000. The 1940 program at this project is costing $20,500,000.

An allotment of $8,100,000 was made by the War Department for additional work on Denison Dam, making the total $21,588,321 for carrying on the big project on the Red River. Bids were received by the U. S. Engineer Office at Vicksburg, Miss., for constructing Wallace Lake Dam, 14 miles southeast of Shreveport, La. A $1,608,575 low bid was received by the Huntington office for constructing the Guyandotte flood wall at that West Virginian town.

What may be a huge expansion of gas pipeline facilities got a start when Gulf Oil Corp., Tulsa, made awards for extension of its lines from the Glenn pool in Oklahoma to Dublin, in Indiana near the Ohio boundary. Hope Natural Gas Co., Charleston, W. Va., made preparations to build a $2,000,000 pipeline from eastern Kentucky to a point near Clarksburg.

A $7,000,000 program of Southern Natural Gas Co. will include construction of 260 miles of steel arteries in Louisiana, Mississippi, Alabama and Georgia. Two 10-inch pipes will stretch beneath the waters of the Mississippi River.

Lion Oil Co. started on a plant in Magnolia field of Columbia County, Arkansas. Hydrogen sulfide will be removed from sour gas to make it available for industrial use. Carter Oil Corp., Standard Oil affiliate, is to build a plant near

(*Continued on page 62*)


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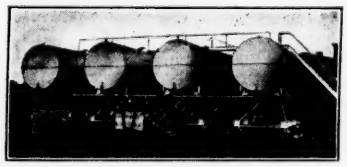

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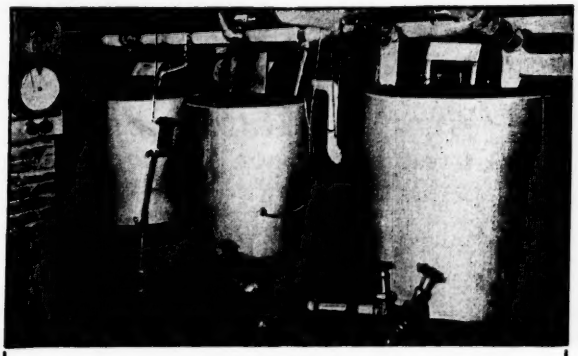

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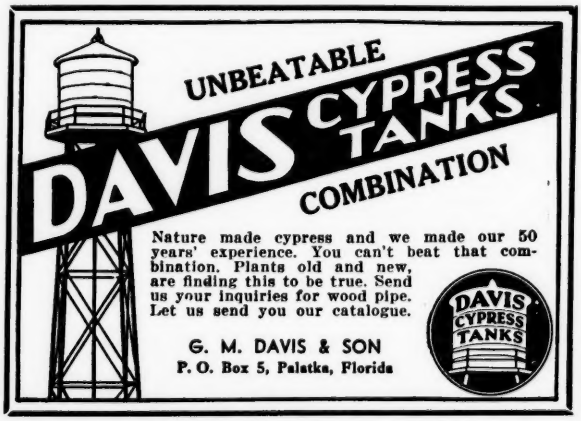



Nature made cypress and we made our 50 years' experience. You can't beat that combination. Plants old and new, are finding this to be true. Send us your inquiries for wood pipe. Let us send you our catalogue.

G. M. DAVIS & SON
P. O. Box 5, Palatka, Florida

## South's Contracts at Peak Point

(*Continued from page* 60)

Stamps, Ark., to sweeten the sour gas to be used by the new Arkansas Power & Light Co. power plant. Lone Star Gas Co., Dallas, and Rogers Lacy, Longview, Texas, started work on a $400,000 gas recycling plant in Gregg County, southwest of the latter town. A plant planned by Continental Oil Co. in the Rincon field, near Rio Grande City, Texas, will have a capacity of 1,750,000 cubic feet per day.

Construction is to be started immediately by Standard Oil Company of Louisiana on a synthetic rubber and chemical plant at Baton Rouge, La. Cost is placed between $12,000,000 and $15,000,000, the expenditure to be spread over a period of 15 months. Reports circulated at Fairmont, W. Va., that Westinghouse Electric & Manufacturing Co., which is soon to open a big fluorescent tube plant at that point, would erect a $1,250,000 glass factory nearby.

Tennessee Products Corp., Chattanooga, received permission to double its coke capacity at a cost of $1,500,000. The additional supply will be taken by the Alcoa, Tenn., operations of Aluminum Company of America. Masonite Corp., Chicago concern, operating at Laurel, Miss., made public its $1,500,000 program including an $800,000 steam turbine plant and a $600,000 manufacturing addition.

## Industrial

**(Industrial, Electric Railways, Railroads, Buses, Telephones, Docks, Steamships)**

| | June, 1941 | | Contracts Awarded First Six Months 1941 |
|---|---|---|---|
| | Contracts Awarded | Contracts to be Awarded | |
| Alabama | $11,112,000 | $81,492,000 | $110,266,000 |
| Arkansas | 11,145,000 | 59,437,000 | 11,552,000 |
| Dist. of Col. | 1,287,000 | 25,000 | 3,155,000 |
| Florida | 252,000 | 285,000 | 4,732,000 |
| Georgia | 7,235,000 | 3,550,000 | 21,273,000 |
| Kentucky | 3,863,000 | 1,515,000 | 36,285,000 |
| Louisiana | 48,386,000 | 48,565,000 | 67,632,000 |
| Maryland | 1,190,000 | 2,048,000 | 26,047,000 |
| Mississippi | 2,250,000 | 257,000 | 8,033,000 |
| Missouri | 2,301,000 | 203,792,000 | 30,678,000 |
| N. Carolina | 6,418,000 | 30,390,000 | 14,241,000 |
| Oklahoma | 2,788,000 | 12,145,000 | 16,148,000 |
| S. Carolina | 561,000 | 45,000 | 5,151,000 |
| Tennessee | 47,770,000 | 3,984,000 | 86,892,000 |
| Texas | 50,686,000 | 53,674,000 | 113,016,000 |
| Virginia | 1,357,000 | 1,600,000 | 8,227,000 |
| W. Virginia | 16,448,000 | 2,220,000 | 45,960,000 |
| TOTAL | $215,049,000 | $505,024,000 | $609,258,000 |

## Private Building

**(Assembly, Commercial, Residential, Office)**

| | June, 1941 | | Contracts Awarded First Six Months 1941 |
|---|---|---|---|
| | Contracts Awarded | Contracts to be Awarded | |
| Alabama | $150,000 | $245,000 | $1,886,000 |
| Arkansas | 30,000 | 55,000 | 194,000 |
| Dist. of Col. | .... | .... | 10,065,000 |
| Florida | 3,976,000 | 1,784,000 | 14,903,000 |
| Georgia | 1,226,000 | 290,000 | 4,849,000 |
| Kentucky | .... | .... | 65,000 |
| Louisiana | 205,000 | 462,000 | 2,075,000 |
| Maryland | 2,603,000 | 790,000 | 14,920,000 |
| Mississippi | 107,000 | 102,000 | 1,037,000 |
| Missouri | 707,000 | 466,000 | 3,573,000 |
| N. Carolina | 443,000 | 220,000 | 3,102,000 |
| Oklahoma | .... | 255,000 | 112,000 |
| S. Carolina | 205,000 | 240,000 | 1,221,000 |
| Tennessee | 346,000 | 81,000 | 1,439,000 |
| Texas | 3,499,000 | 1,466,000 | 17,747,000 |
| Virginia | 174,000 | 409,000 | 3,178,000 |
| W. Virginia | .... | 150,000 | 324,000 |
| TOTAL | $13,671,000 | $7,015,000 | $80,690,000 |

## Public Building

**(City, County, Federal; Housing; Schools)**

| | June, 1941 | | Contracts Awarded First Six Months 1941 |
|---|---|---|---|
| | Contracts Awarded | Contracts to be Awarded | |
| Alabama | $4,013,000 | $28,015,000 | $18,264,000 |
| Arkansas | 283,000 | 16,553,000 | 1,100,000 |
| Dist. of Col. | 4,451,000 | 1,170,000 | 16,342,000 |
| Florida | 4,018,000 | 5,695,000 | 25,545,000 |
| Georgia | 3,789,000 | 6,811,000 | 29,080,000 |
| Kentucky | 884,000 | 915,000 | 2,908,000 |
| Louisiana | 1,391,000 | 3,399,000 | 18,830,000 |
| Maryland | 2,508,000 | 2,826,000 | 16,946,000 |
| Mississippi | 10,796,000 | 3,420,000 | 16,749,000 |
| Missouri | 661,000 | 440,000 | 7,198,000 |
| N. Carolina | 5,826,000 | 2,775,000 | 40,668,000 |
| Oklahoma | 434,000 | 1,075,000 | 3,689,000 |
| S. Carolina | 5,115,000 | 2,385,000 | 20,106,000 |
| Tennessee | 3,127,000 | 1,670,000 | 5,738,000 |
| Texas | 11,952,000 | 14,900,000 | 36,582,000 |
| Virginia | 29,093,000 | 3,770,000 | 42,048,000 |
| W. Virginia | 191,000 | 10,000 | 2,806,000 |
| TOTAL | $88,532,000 | $95,829,000 | $304,599,000 |

## Public Engineering

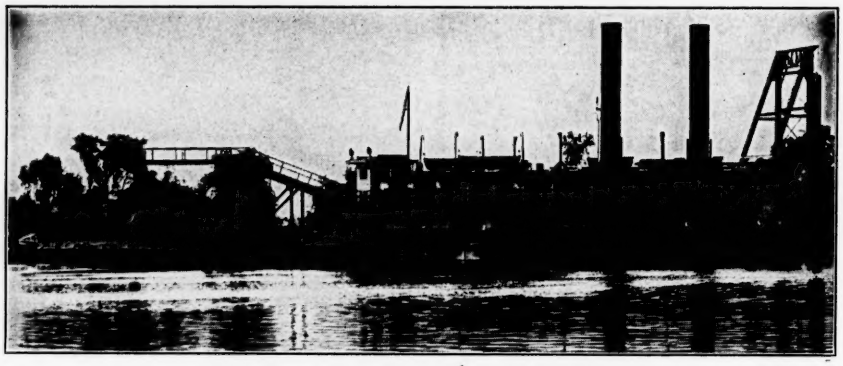
**(Dams, Drainage, Sewers, Waterworks, etc.)**

| | June, 1941 | | Contracts Awarded First Six Months 1941 |
|---|---|---|---|
| | Contracts Awarded | Contracts to be Awarded | |
| Alabama | $362,000 | $150,000 | $1,735,000 |
| Arkansas | 16,000 | 525,000 | 12,734,000 |
| Dist. of Col. | 61,000 | .... | 2,540,000 |
| Florida | 760,000 | 5,254,000 | 3,070,000 |
| Georgia | 335,000 | 55,000 | 1,129,000 |
| Kentucky | 1,841,000 | 62,103,000 | 2,594,000 |
| Louisiana | 1,701,000 | 43,695,000 | 3,265,000 |
| Maryland | 317,000 | 1,402,000 | 1,932,000 |
| Mississippi | 157,000 | 2,092,000 | 479,000 |
| Missouri | 2,918,000 | 4,487,000 | 3,953,000 |
| N. Carolina | 607,000 | 36,538,000 | 3,032,000 |
| Oklahoma | 532,000 | 1,470,000 | 1,442,000 |
| S. Carolina | 1,579,000 | 780,000 | 3,985,000 |
| Tennessee | 16,693,000 | 1,859,000 | 22,642,000 |
| Texas | 3,775,000 | 32,970,000 | 12,521,000 |
| Virginia | 254,000 | 198,000 | 1,284,000 |
| W. Virginia | 1,664,000 | 459,000 | 2,752,000 |
| TOTAL | $33,572,000 | $194,037,000 | $81,089,000 |


# DREDGING

**FILLING, LAND RECLAMATION, CANALS, PORT WORKS**

**RIVER AND HARBOR IMPROVEMENTS—DEEP WATERWAYS AND SHIP CHANNELS**



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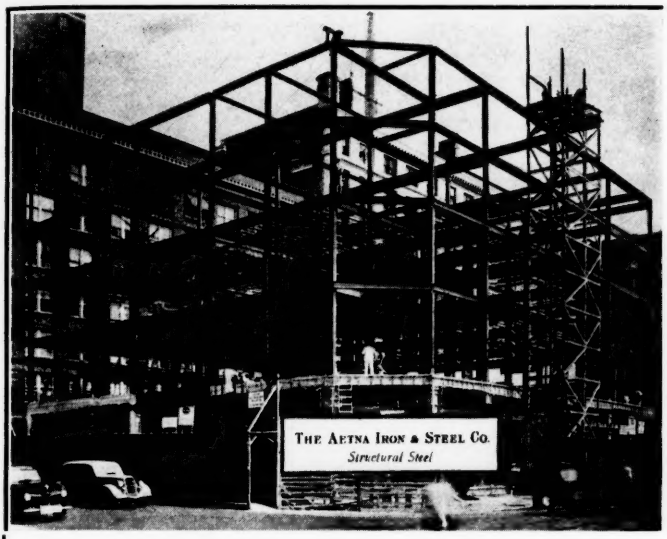


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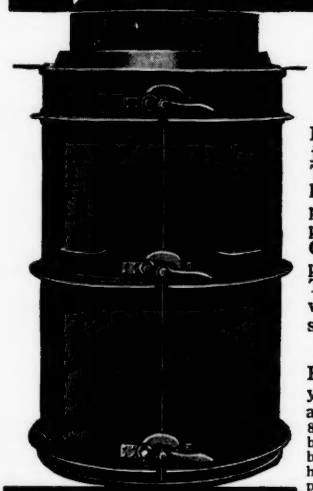

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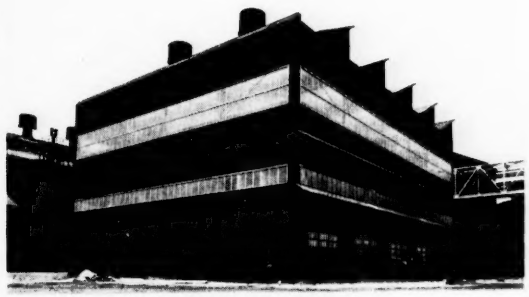

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XUM

## British Cotton and Rayon Textile Book

An exceedingly attractive book, *British Cotton and Rayon Textiles*, has been published by The Cotton Board, of Manchester, England. It is designed primarily for American buyers of British imports, but may be read with interest by anyone connected with the textile field, from the wholesale merchant or department store buyer to the housewife.

The book is divided into five sections, all profusely and well illustrated in black and white as well as color. The first covers cotton and rayon in the piece; the second describes the uses of these fabrics for wear, including everything from overalls to lingerie; in the third are found fabrics for curtains, draperies, upholstery and other furnishing uses; the fourth is devoted to cotton and rayon in sheets, tablecloths, toweling, and other houshold accessories; and the fifth deals with a wide range of miscellaneous merchandise, as well as various specialized developments in the industry.

There are two brief articles in the beginning of the book which form interesting background for Britain's trade under present conditions. The first is a forword by Sir Andrew Duncan, president of the Board of Trade, which tells how the textile district of Lancashire, in keeping step with the rest of England, has kept up the secondary war effort of maintaining foreign trade as well as playing its part in the primary effort of actual defense.

The second article outlines the reasons for England's leadership in the textile field. There are four reasons advanced for this leadership: the universality of the market, enabling the ideas developed for one section to spread rapidly all over the world; the large research organization, employing over three hundred scientists and technicians; the democratic nature of the industry, which always has a place for newcomers of ability; and the natural advantages, including ready power and moist climate. It is also claimed that such recent important developments as crease-resisting fabrics, the prevention of wool shrinkage, and a waterproofing process which survives washing have all originated in Great Britain.

Inquiries for this book should be addressed to Mr. M. Stanley Brown, Suite 612, 103 Park Avenue, New York City.

## Hercules Powder Takes Over John D. Lewis, Inc.

The Hercules Powder Company announced recently the purchase of the synthetic resin business of John D. Lewis, Inc., of Providence, Rhode Island. With this acquisition Hercules, the largest producer of resin in the United States, become a major unit in the production of synthetic resins. Through this transaction, effective July 1st, 1941, Hercules acquired the land, buildings, equipment, and processes of the Lewis synthetic resin plant at Mansfield, Mass., and the entire plant at Brunswick, Ga.

## Lose New Sup't of Construction for Koppers

Harry B. Lose has been appointed superintendent of construction for the Engineering and Construction division of the Koppers Co., it is announced by Joseph Becker, vice president of the company and general manager of that division. Mr. Lose formerly was assistant superintendent, and succeeds Roy L. Smith, who died recently. His history with the Koppers Co. dates from 1916.

## Merritt Heads Sales Executives

Kinsey N. Merritt of New York was elected president of the National Federation of Sales Executives at its sixth annual convention, held in Cincinnati, Ohio. Mr. Merritt is general sales manager of the Railway Express Agency. Vice presidents elected included R. W. Adams, Don Lee Corp., San Francisco; Harry Moock, Plymouth Motors Corp., Detroit; C. D. Cox, West Disinfecting Co., Dallas, Tex.; and A. H. Carter, Canadian Industries, Ltd., Toronto, Canada.

## MacBeth and Stewart Hold New Posts With Jones & Laughlin

The appointments of James MacBeth, Jr. as Manager of Pig Iron Sales and B. E. Stewart as Manager of By-Product Sales of the Jones and Laughlin Steel Corp., Pittsburgh, was announced recently. The two new managers succeed the late M. W. St. John.

With the exception of a year in the army during the first world war, MacBeth has served with Jones and Laughlin since 1915, when he entered business. Stewart has been with J. & L. since 1937, having previously held posts as chemist with the Consolidation Coal Co. and the Northern West Virginia Coal Operators Association.

**TWENTY-FIFTH ANNIVERSARY—**
Booklet—published by the Donaldson Company to commemorate its twenty-five years of manufacturing air cleaners. The publication outlines the history of the company, contains photographs of the chief members of its personnel, and describes, through pictures and text, the main items of its manufacturing line.
**The Donaldson Company,** St. Paul, Minn.

**CONDENSERS AND COOLERS—**
Bulletin No. C-1100-B13—dealing with shell-type condensers and coolers, including multi-pass condensers and coolers, non-priming brine coolers, ice tank coolers, and "spira-flo" vertical condensers. This illustrated bulletin is published by the Carbondale Division of the
**Worthington Pump and Machinery Corp.,** Harrison, N. J.

**POWER PUMPS—**
Bulletin No. W-412-B30 — describing by means of line drawings, photographs and text the specifications, dimensions, installation and special features of horizontal duplex plunger power pumps, types KLF, KKF, and KML.
**Worthington Pump and Machinery Corp.,** General Offices, Harrison, N. J.

**SPREADER STOKER—**
Catalogue No. SS-2—describing the latest features of the C-E Spreader Stoker, with eighteen photographs, and its application to the firing of various types of boilers. There is discussion of this stoker's wide range of fuels and also of cinder removal and recovery.
**Combustion Engineering Co., Inc.,** 200 Madison Ave., N. Y., with district offices in Birmingham, Charlotte, Houston, Kansas City, and St. Louis.

**PROTECTIVE FENCE—**
Catalogue No. 110 — showing protective fences of the chain link type, with sixty illustrations. There is a complete table giving pertinent information about all types and making it easy to find in the catalogue.
**Anchor Post Fence Co.,** Baltimore, Md.

**PROCESS EQUIPMENT—**
Catalogue—describing a complete line of agitators, mixers, digesters, kettles, ball mills, and pebble mills. Specification tables are included with pictures and description of each piece of equipment.
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